

IOWA BIRD LIFE



Vol. XLVIII No. 1

March, 1978

Published by the

IOWA ORNITHOLOGISTS' UNION

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The Iowa Ornithologists' Union was organized at Ames, Iowa, February 28, 1923, for the study and protection of native birds and to promote fraternal relations among Iowa bird students.

The central design of the Union's official seal is the American Goldfinch, designated State Bird of Iowa in 1933.

Publication of the Union: Mimeographed letters, 1923-1928; THE BULLETIN 1929-1930; IOWA BIRD LIFE beginning 1931.

SUBSCRIPTION RATE: \$5.00 a year, single copies \$1.25. Subscriptions to the magazine is included in all paid memberships, of which there are six classes as follows: Life Member, \$100.00, payable in four equal installments; Contributing Member, \$15.00 a year; Supporting Member, \$10.00 a year; Family Member, \$8.00 a year; Regular Member, \$5.00 a year; Junior Member (under 16 years of age), \$2.00 a year.

 EDITORIAL AND PUBLICATION OFFICE

235 McCLELLAN BLVD.

DAVENPORT, IOWA 52803

Published quarterly by the Iowa Ornithologists' Union at 235 McClellan Blvd., Davenport, Iowa, 52803. Second class postage paid at Davenport, Iowa. Subscription \$5.00, single copies \$1.25.

The First Iowa Foray

(continued)

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The Vascular Plants of Fremont County, Iowa

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LACROSSE, WISC.	CEDAR FALLS, IOWA	DES MOINES, IOWA

Fremont County is located in extreme southwestern Iowa. Its flora includes species typical of eastern forests of the interior highlands region and species typical of the dry, western plains (Fay, 1953). The forest species are found in protected valleys, while the western species are found on the exposed slopes and ridges. The synusial pattern of the valleys and loess ridges results in the juxtaposition of eastern and western floristic elements within a distance of a few meters. The peripheral location of the county and the phytogeographic contrasts of its flora make the county of considerable importance to the natural history of Iowa. Surprisingly, a county flora for Fremont County has not been previously published. As part of the 1977 Foray, jointly sponsored by the Iowa Ornithologists' Union and the Iowa State Preserves Board, we have prepared a county flora and have noted the species that were identified during the foray (June 3-7, 1977). While the flora reflects the entire county, our observations were primarily restricted to Washington township. Additional plants were recognizable to genus, but they could not satisfactorily be identified to species at the time of the foray. The presentation of the county flora along with the Foray list will also provide a convenient check list for future forays to Fremont County.

The list is subdivided into four parts: pteridophytes, gymnosperms, flowering dicots, and flowering monocots. Families, genera, and species are arranged alphabetically within the subdivisions. Scientific and common names reflect usage in standard botanical manuals (Fernald, 1950; Gleason, 1952; Gleason and Cronquist, 1963; Wherry, 1961). The list is based upon compilation from a regional flora of southwestern Iowa (Fay, 1953) and a recent study of the pteridophytes of Iowa (Peck, 1976), from limited inspection of herbarium sheets at Iowa State University, and from lists of plants observed or collected during the foray. Introduced or adventive species are noted with an asterisk (*), while species identified during the foray are noted with a plus (+).

PTERIDOPHYTES — FERNS AND FERN ALLIES

ADIANTACEAE	MAIDENHAIR FERN FAMILY
+ <i>Adiantum pedatum</i> L.	Northern Maidenhair Fern
AZOLLACEAE	MOSQUITO FERN FAMILY
<i>Azolla mexicana</i> Presl	Mosquitoe Fern
ASPLENIACEAE	COMMON FERN FAMILY
<i>Camptosorus rhizophyllus</i> (L.)	Walking Fern
Link	
+ <i>Cystopteris protrusa</i> (Weath.)	Creeping Fragile Fern
Blasdel	

Editor's note: Since the articles in Part 2 of the Foray Report do not relate directly to birds of cost of printing these papers is being underwritten by an independent source, not I.O.U. funds.

EQUISETACEAE

- + *Equisetum arvense* L.
- + *Equisetum hyemale* L.
- + *Equisetum X ferrissii* Clute
- + *Equisetum laevigatum* A. Br.

OPHIOGLOSSACEAE

- + *Botrychium virginianum* (L.) Sw.

GYMNOSPERMS

CUPRESSACEAE

- + *Juniperus virginiana* L.

DICOTYLEDONEAE

ACANTHACEAE

- Ruellia humilis* Nutt.

ACERACEAE

- + * *Acer ginniaia* Maxim.
- + *Acer negundo* L.
- + *Acer saccharinum* L.

AIZOACEAE

- Mollugo verticillata* L.

AMARANTHACEAE

- Amaranthus graecizans* L.
- * *Amaranthus retroflexus* L.
- Amaranthus tamariscinus* Nutt.

ANACARDIACEAE

- + *Rhus glabra* L.
- + *Rhus radicans* L.

ANNONACEAE

- + *Asimina triloba* (L.) Dunal.

APIACEAE

- + *Cicuta maculata* L.
- + * *Conium maculatum* L.
- + *Cryptotaenia canadensis* (L.) D.C.
- * *Daucus carota* L.
- Lomatium foeniculaceum* (Nutt.) Coalt. & Rose
- + *Osmorhiza claytonii* (Michx.) Clarke.
- + *Osmorhiza longistylis* (Torr.) DC.
- + *Pastinaca sativa* L.
- + *Sanicula canadensis* L.
- + *Sanicula gregaria* Bickn.
- + *Taenidia integerrima* (L.) Drude

APOCYNACEAE

- + *Apocynum cannabinum* L.
- Apocynum sibiricum* Jacq.

ARALIACEAE

- + *Aralia racemosa* L.
- Panax quinquefolus* L.

ASCLEPIADACEAE

- + *Ampelamus albidus* (Nutt.) Britt.

HORSETAIL FAMILY

- Field Horsetail
- Common Scouring-rush
- Hybrid Scouring-rush
- Smooth Scouring-rush

ADDERS-TONGUE FAMILY

- Rattlesnake Fern

CYPRESS FAMILY

- Eastern Red Cedar

FLOWERING PLANTS

ACANTHUS FAMILY

- Wild Petunia

MAPLE FAMILY

- Amur Maple
- Box Elder
- Silver Maple

CARPET-WEED FAMILY

- Carpet-weed

PIGWEEED FAMILY

- Prostrate Pigweed
- Green Pigweed
- Water-hemp

SUMAC FAMILY

- Smooth Sumac
- Poison Ivy

CUSTARD-APPLE FAMILY

- Papaw

PARSLEY FAMILY

- Water Hemlock
- Poison Hemlock
- Honewort

- Queen Anne's Lace

- Hairy Parsley

- Sweet Cicely

- Smooth Sweet Cicely

- Wild Parsnip

- Black Snakeroot

- Common Snakeroot

- Yellow Pimpernel

DOGBANE FAMILY

- Indian Hemp

- Indian Hemp

GINSENG FAMILY

- Spikenard
- Ginseng

MILKWEED FAMILY

- Sandvine

- | | |
|--|------------------|
| + <i>Asclepias incarnata</i> L. | Swamp Milkweed |
| + <i>Asclepias syriaca</i> L. | Common Milkweed |
| + <i>Asclepias tuberosa</i> L. | Butterfly Weed |
| + <i>Asclepias verticillata</i> L. | Whorled Milkweed |
| + <i>Asclepias viridiflora</i> Raf. var.
<i>lineatis</i> (Gray) Fern. | Green Milkweed |

ASTERACEAE

- Actinomeria alternifolia* (L.) DC.
 + *Ambrosia artemisiifolia* L.
Ambrosia psilostachya DC. var.
 coronopifolia (T. & G.) Farw.
 + *Ambrosia trifida* L.
Antennaria neglecta Greene
 + * *Anthemis cotula* L.
 + *Artemesia biennis* Willd.
 + *Artemesia ludoviciana* L.
Aster ericoides L.
Aster laevis L.
Aster oblongifolius Nutt.
Aster ontarionis Wieg.
Aster praealtus Poir.
Aster sagittifolius Wed.
 + *Aster sericeus* Vent.
Aster simplex Willd.
Bidens cernua L.
Bidens frondosa L.
Bidens tripartita L.
Bidens vulgata Greene
 + *Cacalia atriplicifolia* L.
 + *Cacalia tuberosa* Nutt.
 + * *Carduus nutans* L.
 Cirsium altissimum (L.) Spreng.
 Cirsium flodmanii Rydb.
 Cirsium undulatum (Nutt.)
 Spreng.
 Conyza canadensis (L.) Cron.
 Conyza ramosissimus Cron.
 + *Coreopsis palmata* Nutt.
 + *Dyssodia papposa* (Vent.) Hitchc.
 + * *Eclipta alba* Hassk.
 Erechtites hieracifolia (L.) Raf.
 + *Erigeron annuus* (L.) Pers.
 Erigeron philadelphicus L.
 Erigeron strigosus Muhl.
 Eupatorium altissimum L.
 Eupatorium purpureum L.
 Eupatorium rugosum Houtt.
 Eupatorium serotinum Michx.
 + * *Gnaphalim obtusifolium* L.
 Haplopappus spinulosus (Pursh)
 DC.
 Helenium autumnale L.
 Helianthus annuus L.

ASTER FAMILY

- Wing-stem
 Small Ragweed
 Western Ragweed

 Giant Ragweed
 Pusseytoes
 Dogfennel
 Wormwood
 Prairie Sage
 Frost Weed
 Smooth Aster
 Aromatic Aster

 Willow Aster
 Arrow-leaved Aster
 Silky Aster
 Panicked Aster
 Stick-tight
 Beggar-ticks
 Beggar-ticks
 Beggar-ticks
 Pale Indian Plantain
 Tuberous Indian Plantain
 Musk-thistle
 Tall-thistle
 Thistle
 Thistle

 Horseweed
 Low Horseweed
 Tickseed
 Fetid Marigold

 Fireweed
 Daisy-fleabane
 Fleabane
 Fleabane
 Tall Thoroughwort
 Joe-Pye Weed
 White Snakeroot
 Late Boneset
 Catfoot

 Sneezeweed
 Common Sunflower

<i>Helianthus hirsutus</i> Raf.	Stiff-haired Sunflower
<i>Helianthus laetiflorus</i> Pers.	Showy Sunflower
<i>Helianthus maximiliani</i> Schrad.	
<i>Helianthus strumosus</i> L.	Pale-leaved Sunflower
<i>Helianthus tuberosus</i> L.	Jersualem Artichoke
<i>Heliopsis helianthoides</i> (L.) Sweet	Ox-eye
<i>Iva xanthifolia</i> Nutt.	Marsh Elder
<i>Kuhnia eupatoriodes</i> L.	False-boneset
<i>Lactuca canadensis</i> L.	Wild Lettuce
<i>Lactuca floridana</i> (L.) Gaertn.	Blue Lettuce
<i>Lactuca ludoviciana</i> (Nutt.) Riddell	Prairie Lettuce
+ <i>Lactuca pulchella</i> (Pursh) DC.	Wild Lettuce
<i>Lactuca scariola</i> L.	Prickly Lettuce
<i>Liatris punctata</i> Hook.	Dotted Blazing Star
<i>Liatris spherioidea</i> Michx.	Blazing Star
+ <i>Lygodesmia juncea</i> (Pursh) D. Don.	Skeleton Plant
<i>Parthenium integrifolium</i> L.	Fever Few
<i>Prenanthes alba</i> L.	Rattlesnake Root
<i>Rudbeckia laciniata</i> L.	Tall Coneflower
+ <i>Rudbeckia hirta</i>	Black-eyed Susan
+ <i>Senecio glabellus</i> Poir.	Ragwort
<i>Silphium integrifolium</i> Michx.	Rosinweed
<i>Solidago altissima</i> L.	Tall Goldenrod
<i>Solidago canadensis</i> L.	Canadian Goldenrod
<i>Solidago flexicaulis</i> L.	Zig-zag Goldenrod
<i>Solidago gigantea</i> Ait.	Smooth Goldenrod
<i>Solidago graminifolia</i> (L.) Salisb.	Lance-leaved Goldenrod
<i>Solidago missouriensis</i> Nutt.	Missouri Goldenrod
<i>Solidago nemoralis</i> Ait.	Gray Goldenrod
+ <i>Solidago rigida</i> L.	Stiff Goldenrod
<i>Solidago speciosa</i> Nutt.	Showy Goldenrod
<i>Solidago ulmifolia</i> Muhl.	Elm-leaved Goldenrod
* <i>Sonchus asper</i> (L.) Hill	Spiny-leaved Sow Thistle
+ * <i>Taraxacum officinale</i> Weber.	Common Dandelion
+ <i>Tragopogon dubius</i> Scop.	Goatsbeard
<i>Vernonia altissima</i> Nutt.	Ironweed
<i>Vernonia baldwini</i> Torr.	Ironweed
BALSAMINACEAE	JEWELWEED FAMILY
<i>Impatiens biflora</i> Willd.	Spotted Touch-me-not
+ <i>Impatiens pallida</i> Nutt.	Pale Touch-me-not
BERBERIDACEAE	BARBERRY FAMILY
* <i>Berberis vulgaris</i> L.	European Barberry
BETULACEAE	BIRCH FAMILY
+ <i>Corylus americana</i> Walt.	Hazelnut
+ <i>Ostrya virginiana</i> (Mill.) K. Koch	Ironwood
BIGNONIACEAE	TRUMPET CREEPER FAMILY
+ * <i>Campsis radicans</i> (L.) Seem.	Trumpet Creeper
+ * <i>Catalpa speciosa</i> Warder	Indian Bean

BORAGINACEAE

- * *Cynoglossum officinale* L.
- Hackelia virginiana* (L.) Johnst.
- Lithospermum canescens*
(Michx.) Lehm.
- Lithospermum incisum* Lehm.
- Onosmodium molle* Michx. var.
occidentale (Mack.) Johnst.

BRASSICACEAE

- + *Arabis canadensis* L.
- * *Brassica kaber* (DC.) L. Wheeler
- * *Capsella bursa-pastoris* (L.)
Medic.
- + *Cardaria draba* (L.) Desv.
- * *Descurainia pinnata* (Walt.)
Britt. var. *brachycarpa* (Rich-
ards) Fern.
- * *Descurainia sophia* (L.) Webb
- Lepidium virginicum* L.
- Rorippa islandica* (Oeder) Borbas
- Rorippa sessiliflora* (Nutt.)
Hitchc.
- Rorippa sinuata* (Nutt.) Hitchc.
- * *Sisymbrium officinale* (L.) Scop.

CAMPANULACEAE

- Campanula americana* L.
- + *Triodanis perfoliatis* (L.) Nieuwl.

CANNABINACEAE

- + * *Cannabis sativa* L.
- Humulus lupulus* L.

CAPPARIDACEAE

- Cleome serrulata* Pursh

CAPRIFOLIACEAE

- + *Lonicera dioica* L.
 - Lonicera prolifera* (Kirchn.)
Rehd.
 - + * *Lonicera tatarica* L.
 - + *Sambucus canadensis* L.
 - + *Symphoricarpos occidentalis*
Hook.
 - + *Symphoricarpos orbiculatus*
Moench.
 - + *Triosteum perfoliatum* L.
- CARYOPHYLLACEAE
- Paronychia canadensis* (L.)
Wood
 - * *Saponaria officinalis* L.
 - * *Saponaria vaccaria* L.
 - + *Silene dichotoma* Ehrh.
 - * *Silene noctiflora* L.
 - + *Silene stellata* (L.) Ait.

BORAGE FAMILY

- Hound's Tongue
- Beggar's Lice
- Hoary Puccoon
- Narrow-leaved Puccoon
- False Gromwell

MUSTARD FAMILY

- Sickle Pod
- Charlock
- Shepard's Purse
- Hoary Cress
- Tansy Mustard
- Herb Sophia
- Poor Man's Pepper
- Yellow Cress
- Yellow Cress

- Yellow Cress
- Hedge Mustard

BLUEBELL FAMILY

- Tall Bellflower
- Venus' Looking-glass

HEMP FAMILY

- Hemp
- Common Hop

CAPER FAMILY

- Stinking Clover

HONEYSUCKLE FAMILY

- Wild Honeysuckle
- Wild Honeysuckle
- Tatarian Honeysuckle
- Common Elder
- Wolfberry

- Coralberry

- Feverwort

PINK FAMILY

- Forked Chickweed
- Bouncing Bet
- Cow Herb
- Forking Catchfly
- Night-flowering Catchfly
- Starry Campion

CELASTRACEAE

- + *Celastrus scandens* L.
- Euonymus atropurpureus* Jacq.

CERATOPHYLLACEAE

- + *Ceratophyllum demersum* L.

CHENOPODIACEAE

- + *Chenopodium album* L.
- Chenopodium hybridum* L.
- Chenopodium atriplicifolium* (Spreng.) Coult.
- * *Salsola kali* L. var. *tenuifolia* G.F.W. Mey.

CONVOLVULACEAE

- * *Convolvulus arvensis* L.
- Convolvulus sepium* L.
- + *Cuscuta polygonorum* Engelm.
- * *Ipomoea hederacea* Jacq.

CORNACEAE

- + *Cornus drummondii* C. A. Meyer
- Cornus obliqua* Raf.

CUCURBITACEAE

- * *Cucurbita foetidissima* HBK.
- Sicyos angulatus* L.

ELEAGNACEAE

- * *Eleagnus angustifolia* L.

EUPHORBIACEAE

- + *Acalypha ostryaefolia* Riddell
- + *Acalypha virginica* L.
- Euphorbia corollata* L.
- Euphorbia dentata* Michx.
- Euphorbia glyptosperma* Engelm.
- Euphorbia heterophylla* L.
- Euphorbia marginata* Pursh
- Euphorbia serpens* HBK.
- Euphorbia serpyllifolia* Pers.
- Euphorbia supina* Raf.

FABACEAE

- + *Amorpha canescens* Pursh
- + *Amorpha fruticosa* L.
- + *Amphicarpa bracteata* (L.) Fern.
- Apios americana* Medic.
- Astragalus canadensis* L.
- Astragalus lotiflorus* Hook.
- + *Cassia marilandica* L.
- + *Cercis canadensis* L.
- Chamaecrista fasciculata* (Michx.) Greene
- * *Crotalaria sagittalis* L.
- Dalea alopecuroides* Willd.
- + *Dalea enneandra* Nutt.
- + *Desmanthus illinoensis* (Michx.) MacM.

BITTERSWEET FAMILY

- Bittersweet
- Wahoo

HORNWORT FAMILY

- Coontail

GOOSEFOOT FAMILY

- Lamb's Quarters
- Maple-leaf Goosefoot
- Winged Pigweed

- Russian Thistle

MORNING-GLORY FAMILY

- European Bindweed
- Wild Morning-glory
- Dodder
- Morning-glory

DOGWOOD FAMILY

- Rough-leaved Dogwood
- Silky Dogwood

GOURD FAMILY

- Wild Pumpkin
- Bur Cucumber

OLEASTER FAMILY

- Russian Olive

SPURGE FAMILY

- Three-seeded Mercury
- Three-seeded Mercury
- Flowering Spurge

- Wild Poinsettia
- Snow-on-the-mountain

- Milk Purslane

PULSE FAMILY

- Leadplant
- Indigo-bush
- Hog Peanut
- Groundnut
- Milk Vetch
- Milk Vetch
- Wild Senna
- Redbud
- Partridge-pea

- Rattle Box
- Foxtail Dalea
- Prairie Clover
- Tick Clover

<i>Desmodium canadense</i> (L.) DC.	Showy Tick-trefoil
<i>Desmodium canescens</i> (L.) DC.	Hoary Tick-trefoil
+ <i>Desmodium cuspidatum</i> (Muhl.) Loud.	
+ <i>Desmodium glutinosum</i> (Muhl.) Wood	Pointed-leaved Tick-trefoil
<i>Desmodium illinoense</i> Gray	Tick-trefoil
<i>Desmodium paniculatum</i> (L.) DC.	Panicled Tick-trefoil
+ <i>Gleditsia triacanthos</i> L.	Honey Locust
<i>Glycyrrhiza lepidota</i> (Nutt.) Pursh	Wild Licorice
+ <i>Gymnocladus dioica</i> (L.) K. Koch	Kentucky Coffeetree
<i>Lespedeza capitata</i> Michx.	Bush-clover
* <i>Lespedeza cuneata</i> (Dumont) G. Don.	Bush-clover
* <i>Lespedeza stipulacea</i> Maxim.	Korean Clover
+ * <i>Medicago lupulina</i> L.	Black Medic
+ * <i>Medicago sativa</i> L.	Cultivated Alfalfa
+ <i>Melilotus alba</i> Desr.	White Sweet Clover
+ * <i>Melilotus officinalis</i> (L.) Lam.	Yellow Sweet Clover
+ <i>Oxytropis lambertii</i> Pursh	Locoweed
+ <i>Petalostemum candidum</i> (Willd.) Michx.	White Prairie Clover
+ <i>Petalostemum purpureum</i> (Vent.) Rydb.	Purple Prairie Clover
+ <i>Psoralea argophylla</i> Pursh	Scurf-pea
<i>Psoralea esculenta</i> Pursh	Prairie Turnip
+ <i>Robinia pseudoacacia</i> L.	Black Locust
<i>Strophostyles helvola</i> (L.) Ell.	Trailing Wild Bean
<i>Strophostyles leiosperma</i> (T. & G.) Piper	Wild Bean
* <i>Trifolium pratense</i> L.	Red Clover
+ <i>Trifolium procumbens</i> L.	Low Hop-clover
* <i>Vicia villosa</i> Roth.	Vetch
FAGACEAE	BEECH FAMILY
<i>Quercus imbricaria</i> Michx.	Shingle Oak
+ <i>Quercus macrocarpa</i> Michx.	Bur Oak
+ <i>Quercus muehlenbergii</i> Engelm.	Chestnut Oak
+ <i>Quercus rubra</i> L.	Red Oak
+ <i>Quercus velutina</i> Lam.	Black Oak
FUMARIACEAE	FUMITORY FAMILY
<i>Corydalis micrantha</i> (Engelm.) Gray	Slender Fumewort
<i>Dicentra cucullaria</i> (L.) Bernh.	Dutchman's Breeches
HALORAGACEAE	WATER MILFOIL FAMILY
<i>Myriophyllum exalbescens</i> Fern.	Water Milfoil
<i>Myriophyllum pinnatum</i> (Walt.) BSP.	Water Milfoil
HIPPOCASTANACEAE	HORSE CHESTNUT FAMILY
+ * <i>Aesculus glabra</i> Willd.	Ohio Buckeye
HYDROPHYLLACEAE	WATERLEAF FAMILY
+ <i>Hydrophyllum appendiculatum</i> Michx.	Waterleaf

- Hydrophyllum virginianum* L.
HYPERICACEAE
Hypericum prolificum L.
Hypericum sphaerocarpum Michx.
JUGLANDACEAE
+ *Carya cordiformis* (Wang.) K. Koch
+ *Carya ovata* (Mill) K. Koch
Carya tomentosa Nutt.
Juglans cinerea L.
+ *Juglans nigra* L.
LAMIACEAE
Hedeoma hispida Pursh
Hedeoma pulegioides (L.) Pers.
* *Leonurus cardiaca* L.
Lycopus americanus Muhl.
* *Marrubium vulgare* L.
Mentha arvensis L.
Monarda fistulosa L.
* *Nepeta cataria* L.
Physostegia parviflora Nutt.
Prunella vulgaris L.
Pycnanthemum pilosum Nutt.
Salvia reflexa Hornem.
Scutellaria lateriflora L.
Stachys palustris L.
Stachys tenuifolia Willd.
Teucrium canadense L.
Teucrium occidentale Gray
LENTIBULARIACEAE
Utricularia vulgaris L.
LINACEAE
Linum sulcatum Riddell
LYTHRACEAE
Ammannia coccinea Rottb.
MALVACEAE
Callirhoe involucrata (T. & G.) Gray
+ *Hibiscus militaris* Cav.
* *Hibiscus trionum* L.
* *Sida spinosa* L.
MENISPERMACEAE
+ *Menispermum candense* L.
MORACEAE
+ * *Maclura pomifera* (Raf.) Schneid
+ * *Morus alba* L.
+ *Morus rubra* L.
NYCTAGINACEAE
+ *Mirabilis nyctaginea* (Michx.) MacM.
NYMPHACEAE
+ *Nelumbo lutea* (Willd.) Pers.
Virginia Waterleaf
ST. JOHN'S-WORT FAMILY
Shrubby St. John's-wort
St. John's-wort
WALNUT FAMILY
Bitternut Hickory
Shagbark Hickory
Mockernut Hickory
Butternut
Black Walnut
MINT FAMILY
Rough Pennyroyal
Pennyroyal
Motherwort
Water Horehound
Horehound
Wild Mint
Wild Bergamot
Catnip
False Dragonhead
Self Heal
Mountain Mint
Lance-leaved Salvia
Skullcap
Woundwort
Smooth Hedge Nettle
Germander
Wood Sage
BLADDERWORT FAMILY
Bladderwort
FLAX FAMILY
Flax
LOOSESTRIPE FAMILY
Tooth-cup
MALLOW FAMILY
Poppy Mallow
Halberd-leaved Rose Mallow
Flower-of-an-hour
Prickly Mallow
MOONSEED FAMILY
Moonseed
MULBERRY FAMILY
Osage-orange
White Mulberry
Red Mulberry
FOUR-O'CLOCK FAMILY
Four-O'clock
WATER LILY FAMILY
Yellow Lotus

- Nymphaea tuberosa* Paine
 OLEACEAE
 +*Fraxinus americana* L.
 +*Fraxinus pensylvanica* Marsh.
 +*Fraxinus pensylvanica* Marsh.
 var. *subintegerrima* (Vahl.) Fern.

- ONAGRACEAE
 +*Circaea quadrisulcata* (Maxim.)
 Franch. & Sav.
 Gaura coccinea Pursh
 **Gaura parviflora* Dougl.
 +*Jussiaea repens* L.
 +*Oenothera biennis* L.
 +*Oenothera serrulata* Nutt.
 +*Oenothera speciosa* Nutt.

- OXALIDACEAE
Oxalis europaea Jord.
Oxalis stricta L.
Oxalis violacea L.

- PHYRMACEAE
 +*Phyrma leptostachya* L.
 PHYTOLOCCACEAE
 +*Phytolacca americana* L.

- PLANTAGINACEAE
Plantago aristata Michx.
 + * *Plantago lanceolata* L.
 * *Plantago major* L.
 + *Plantago purshii* R. & S.
 + *Plantago rugelii* Dene.
Plantago virginica L.

- PLATANACEAE
 +*Platanus occidentalis* L.

- POLEMONIACEAE
Phlox divaricata L.
Phlox pilosa L.

- POLYGALACEAE
Polygala verticillata L.

- POLYGONACEAE
Polygonum aviculare L.
Polygonum coccineum Muhl.
 + *Polygonum convolvulus* L.
Polygonum erectum L.
Polygonum hydropiper L.
Polygonum lapathifolium L.
Polygonum pensylvanicum Ell.
Polygonum persicaria L.
Polygonum punctatum Ell.
Polygonum scandens L.
 + *Polygonum virginianum* L.
 + *Rumex crispus* L.
Rumex maritimus L. var.
 fueginus (Phillippi) Dusen.

- White Water Lily
 OLIVE FAMILY
 White Ash
 Red Ash
 Green Ash

- EVENING PRIMROSE FAMILY
 Enchanter's Nightshade

- Scarlet Gaura
 Velvety Gaura
 Floating Primrose-willow
 Evening Primrose
 White Evening Primrose

- WOOD SORREL FAMILY
 Lady's Sorrel
 Violet Wood Sorrel
 Wood Sorrel

- LOPSEED FAMILY
 Lopseed
 POKEWEED FAMILY
 Pokeweed

- PLANTAIN FAMILY
 Buckhorn Plantain
 English Plantain
 Common Plantain
 Salt & Pepper Plant
 Rugel's Plantain
 Hoary Plantain

- PLANETREE FAMILY
 American Sycamore

- PHLOX FAMILY
 Blue Phlox
 Prairie Phlox

- MILKWORT FAMILY
 Whorled Milkwort

- BUCKWHEAT FAMILY
 Knotweed
 Water Smartweed
 Black Bindweed
 Erect Knotweed
 Water Pepper
 Pole Smartweed
 Pinkweed
 Lady's Thumb
 Water Smartweed
 Climbing False-buckwheat

- Curly Dock

- Golden Dock

- Rumex obtusifolius* L.
PRIMULACEAE
Lysimachia ciliata L.
PYROLACEAE
Monotropa uniflora L.
RANUNCULACEAE
 + *Actea pachypoda* Ell.
 + *Anemone cylindrica* Gray
 + *Anemone virginiana* L.
 + *Aquilegia canadensis* L.
Clematis pitcheri T. & G.
 + *Delphinium virescens* Nutt.
 + *Ranunculus abortivus* L.
Ranunculus pensylvanicus L.
Ranunculus recurvatus Poir.
Ranunculus scleratus L.
 + *Thalictrum dasycarpum* Fisch.
 & Lall.
RHAMNACEAE
 + *Ceanothus americanus* L.
 + *Ceanothus ovatus* Desf.
Rhamnus lanceolatus Pursh
ROSACEAE
 + *Amelanchier arborea* Michx.
Crataegus calpodendron (Ehrh.)
 Medic.
Crataegus mollis (T. & G.)
 Scheele
Fragaria vesca L. var.
americana Porter
Geum canadense Jacq.
Geum laciniatum Murr.
Potentilla arguta Pursh
Potentilla norvegica L.
Potentilla paradox Nutt.
Potentilla rivalis Nutt.
 + *Prunus americana* Marsh.
 + *Prunus serotina* Ehrh.
 + *Prunus virginiana* L.
Rosa arkansana Porter
Rosa woodsii Lindl.
Rubus allegheniensis Porter
Rubus idaeus L.
 + *Rubus occidentalis* L.
RUBIACEAE
 + *Cephalanthus occidentalis* L.
 + *Galium circaezans* Michx.
 + *Galium concinnum* T. & G.
Galium obtusum Bigel.
 + *Galium triflorum* Michx.
 + *Houstonia nigricans* (Lam.) Fern
RUTACEAE
 + *Zanthoxylum americanum* Mill.
- Bitter Dock
PRIMROSE FAMILY
 Fringed Loosestrife
WINTERGREEN FAMILY
 Indian Pipe
CROWFOOT FAMILY
 Doll's Eyes
 Thimbleweed
 Tall Anemone
 Columbine
 Leather Flower
 Prairie Larkspur
 Small-flowered Crowfoot
 Bristly Crowfoot
 Crowfoot
 Cursed Crowfoot
 Meadow-rue
BUCKTHORN FAMILY
 New Jersey Tea
 Redroot
 Buckthorn
ROSE FAMILY
 Shadbush
 Hawthorn
 Hawthorn
 Woodland Strawberry
 White Avens
 Rough Avens
 Tall Cinquefoil
 Rough Cinquefoil
 Bushy Cinquefoil
 Cinquefoil
 Wild Plum
 Black Cherry
 Choke Cherry
 Rose
 Rose
 Blackberry
 Red Raspberry
 Black Raspberry
MADDER FAMILY
 Buttonbush
 Wild Licorice
 Bedstraw
 Bedstraw
 Sweet-scented Bedstraw
 Bluets
RUE FAMILY
 Prickly-ash

SALICACEAE

- * *Populus alba* L.
- + *Populus deltoides* Marsh.
- Populus tremuloides* Michx.
- + *Salix amygdaloides* Anderss.
- + *Salix humilis* Marsh.
- + *Salix interior* Roulee
- + *Salix nigra* Marsh.
- + *Salix rigida* Muhl.

SANTALACEAE

- + *Comandra umbellata* (L.) Nutt.

SAXIFRAGACEAE

- Penthorum sedoides* L.
- Ribes americanum* Mill.
- + *Ribes missouriense* Nutt.
- Ribes odoratum* Wendl.

SCROPHULARIACEAE

- Bacopa rotundifolia* (Michx.) Wettst.
- + *Castilleja sessiliflora* Pursh
- Gerardia aspera* Dougl.
- Gerardia tenuifolia* Vahl.
- Lindernia anagallidea* (Michx.) Pennell
- Lindernia dubia* (L.) Pennell
- Mimulus ringens* L.
- + *Penstemon grandiflorus* Nutt.
- Scrophularia marilandica* L.
- * *Verbascum thapsus* L.
- Veronica peregrina* L.
- Veronicastrum virginicum* (L.) Farw.

SOLANACEAE

- * *Datura stramonium* L.
- * *Lycium halimifolium* Mill
- * *Nicandra physalodes* (L.) Pers.
- Physalis subglabrata* Mackenz. & Bush
- Physalis virginiana* Mill.
- Solanum carolinense* L.
- + * *Solanum nigrum* L.
- * *Solanum rostratum* Dunal.

STAPHYLEACEAE

- Staphylea trifolia* L.

TILIACEAE

- + *Tilia americana* L.

ULMACEAE

- + *Celtis occidentalis* L.
- + *Ulmus americana* L.
- + *Ulmus rubra* Muhl.

URTICACEAE

- + *Laportea canadensis* (L.) Guad.
- + *Parietaria pensylvanica* Muhl.

WILLOW FAMILY

- Silver-leaved Poplar
- Cottonwood
- Quaking Aspen
- Peach-leaved Willow
- Prairie Willow
- Sandbar Willow
- Black Willow
- Heart-leaved Willow

SANDALWOOD FAMILY

- Bastard Toadflax

SAXIFRAGE FAMILY

- Ditch Stonecrop
- Wild Black Currant
- Missouri Gooseberry
- Buffalo Currant

FIGWORT FAMILY

- Water Hyssop
- Painted Cup
- Harsh Gerardia
- Slender-leaved Gerardia
- False Pimpernel
- False Pimpernel
- Monkey Flower
- Beard-tongue
- Figwort
- Common Mullein
- Neckweed
- Culver's Root

NIGHTSHADE FAMILY

- Jimson Weed
- Matrimony-vine
- Apple-of-Peru
- Ground Cherry

- Ground Cherry
- Horse-nettle
- Black Nightshade
- Buffalo-bur

BLADDERNUT FAMILY

- Bladdernut

BASSWOOD FAMILY

- Basswood

ELM FAMILY

- Hackberry
- American Elm
- Red Elm

NETTLE FAMILY

- Wood Nettle
- Pellitory

+ *Urtica dioica* L.
 VERBENACEAE
Lippia lanceolata Michx.
Verbena bracteata Lag. & Rodr.

+ *Verbena stricta* Vent.
Verbena urticifolia L.

VIOLACEAE

Viola pedatifida G. Don.
Viola pensylvanica Michx.
Viola viarum Pollard

VITACEAE

Ampelopsis cordata Michx.
 + *Parthenocissus quinquefolia* (L.)
 Planch.

+ *Vitis cinerea* Engelm.

ZYGOPHYLLIACEAE

* *Tribulus terrestris* L.

Stinging Nettle
 VERVAIN FAMILY
 Frogfruit

Hoary Vervain
 White Vervain

VIOLET FAMILY

Prairie Violet
 Stemmed Yellow Violet
 Plains Violet

GRAPE FAMILY

Raccoon-grape
 Virginia Creeper

Winter Grape

CALTROP FAMILY

Puncture Weed

FLOWERING PLANTS — MONOCOTYLEDONAE

AGAVACEAE

+ *Yucca glauca* Nutt.

ALLISMATACEAE

+ *Alisma subcordatum* Raf.
Echinodorus rostratus (Nutt.)
 Engelm.
Sagittaria englemanniana J. C.
 Smith

+ *Sagittaria graminea* Michx.

+ *Sagittaria latifolia* Willd.

ARACEAE

Arisaema dracontium (L.) Schott
 + *Arisaema triphyllum* (L.) Schott

CYPERACEAE

+ *Carex amphibola* Steud.
Carex artitecta Mackenz.
 + *Carex atherodes* Spreng.
 + *Carex blanda* (Dew.) Boott
Carex brevior (Dew.) Mackenz.
Carex cephalophora Muhl.
 + *Carex davisii* Schw. & Torr.
Carex eburnea Boott
Carex gravida L. H. Bailey
Carex hitchcockiana Dew.
Carex hystricina Muhl. ex. Willd.
 + *Carex lacustris* Willd.
Carex laeviconica Dew.
Carex molesta Mackenz.
 + *Carex normalis* Mackenz.
 + *Carex oligocarpa* Schkuhr.
Carex pensylvanica Lam.
 + *Carex rosea* Schkuhr. ex Willd.
Carex sparganioides Muhl. ex Willd.
Carex spengelii Dew. ex Spreng.

ALOE FAMILY

Beargrass

WATER PLANTAIN FAMILY

Water Plantain
 Burhead

Arrowhead

Arrowhead

Duck Potato

ARUM FAMILY

Green Dragon
 Jack-in-the-pulpit

SEDGE FAMILY

- Carex stipata* Muhl.
Carex stricta Lam.
Carex suberecta (Olney) Britt.
Carex tribuloides Wahl.
Carex vesicaria L.
+ *Carex vulpinoidea* Michx.
Cyperus acuminatus Torr. & Hook.
Cyperus diandrus Torr.
Cyperus erythrorhizos Muhl.
Cyperus esculentus L. Yellow Nut-grass
Cyperus inflexus Muhl.
Cyperus odoratus L.
Cyperus rivularis Kunth.
Cyperus schweinitzii Torr.
+ *Eleocharis acicularis* (L.) R. & S.
+ *Eleocharis calva* Torr.
Eleocharis obtusa (Willd.) Schultes
+ *Scirpus acutus* Muhl. Great Bulrush
Scirpus americanus Pers. Three-square
+ *Scirpus atrovirens* Willd. Common Bulrush
+ *Scirpus fluviatilis* (Torr.) Gray River Bulrush
+ *Scirpus pendulus* Muhl.
+ * *Scirpus validus* Vahl. Great Bulrush
POACEAE GRASS FAMILY
Agropyron smithii Rydb. Wheat Grass
+ *Agropyron trachycaulum* (Link) Malte. Bearded Wheat Grass
+ *Andropogon gerardi* Vitman Big Blue Stem
+ *Andropogon scoparius* Michx. Little Blue Stem
Aristida cligantha Michx. Prairie Three-awn Grass
Bouteloua curtipendula (Michx.) Torr. Side-oats Grama
Bouteloua gracilis (H.B.K.) Lag. Blue Grama
Bouteloua hirsuta Lag. Hairy Grama
* *Bromus commutatus* Schrad.
+ * *Bromus inermis* Leyss. Smooth Brome
+ *Bromus japonicus* Thunb. Japanese Brome
Bromus purgans L.
* *Bromus racemosus* L.
+ *Bromus tectorum* L. Downy Chess
Calamagrostis canadensis (Michx.) Beauv. Blue-joint Grass
Calamovilfa longifolia (Hook.) Scribn. Sand Reed
* *Digitaria ischaemum* (Schreb.) Muhl. Smooth Crab Grass
+ * *Digitaria sanguinalis* (L.) Scop. Common Crab Grass
Diplachne fascicularis (Lam.) Beauv.
* *Echinochloa crusgalli* (L.) Beauv. Barnyard Grass

<i>Echinochloa muricata</i> (Beauv.) Fern.	Barnyard Grass
<i>Eleusine indica</i> (L.) Gaertn.	Goose Grass
<i>Elymus canadensis</i> L.	Canada Wild Rye
+ <i>Elymus villosus</i> Muhl.	Slender Wild Rye
<i>Eragrostis ciliaris</i> (All.) Link	Virginia Wild Rye
<i>Eragrostis hypnoides</i> (Lam.) BSP.	Stink Grass
<i>Eragrostis pectinacea</i> (Michx.) Nees	
<i>Eragrostis spectabilis</i> (Pursh) Steud.	Purple Love Grass
* <i>Festuca elatior</i> L.	Meadow Fescue
+ <i>Festuca obtusa</i> Biehler	Nodding Fescue
+ <i>Festuca octoflora</i> Walt.	Six-weeks Fescue
+ <i>Glyceria striata</i> (Lam.) Hitchc.	Fowl Manna Grass
+ <i>Hordeum jubatum</i> L.	Squirreltail
+ <i>Hordeum pusillum</i> Nutt.	Little Barley
+ <i>Leersia oryzoides</i> (L.) Sw.	Cut Grass
<i>Leersia virginica</i> Willd.	White Grass
+ * <i>Lolium multiflorum</i> Lam.	Italian Rye Grass
+ <i>Lolium temulentum</i> (L.) Darnel	Bearded Darnel
<i>Muhlenbergia cuspidata</i> (Torr.) Rydb.	
<i>Muhlenbergia racemosa</i> (Michx.) BSP.	
<i>Panicum capillare</i> L.	Witch Grass
<i>Panicum dichotomiflorum</i> Michx.	
* <i>Panicum miliaceum</i> L.	Proso Millet
+ <i>Panicum scribnerianum</i> Nash	Schribner's Panicum
<i>Panicum virgatum</i> L.	Switch Grass
+ <i>Paspalum ciliatifolium</i> Michx.	Bead Grass
+ <i>Phalaris arundinacea</i> L.	Reed Canary Grass
+ <i>Phragmites communis</i> Trin.	Reed
* <i>Poa pratensis</i> L.	Kentucky Blue Grass
* <i>Setaria faberii</i> Herrn.	Nodding Foxtail
+ * <i>Setaria lutescens</i> (Weigel.) Hubb.	Yellow Foxtail
<i>Setaria verticillata</i> (L.) Beauv.	Bristly Foxtail
* <i>Setaria viridis</i> (L.) Beauv.	Green Foxtail
+ <i>Sorghastrum nutans</i> (L.) Nash	Indian Grass
* <i>Sorghum halepense</i> (L.) Pers.	Johnson Grass
+ <i>Spartina pectinata</i> Link	Cord Grass
<i>Sphenopholis obtusata</i> (Michx.) Scribn.	
+ <i>Sporobolus asper</i> (Michx.) Kunth.	Drop Seed
<i>Sporobolus cryptandrus</i> (Torr.) Gray	Sand Drop Seed
<i>Tridens flavus</i> (L.) Hitchc.	Purpletop
+ * <i>Zea mays</i> L.	Cultivated Corn
IRIDACEAE	IRIS FAMILY
<i>Sisyrinchium campestre</i> Bickn.	Blue-eyed Grass
JUNCACEAE	RUSH FAMILY
+ <i>Juncus dudleyi</i> Wieg.	
+ <i>Juncus interior</i> Wieg.	
<i>Juncus nodosus</i> L.	

+ <i>Juncus tenuis</i> Willd.	Path Rush
<i>Juncus torrevi</i> Coville	
LEMNACEAE	DUCKWEED FAMILY
+ <i>Lemna minor</i> L.	Duckweed
+ <i>Lemna trisulca</i> L.	Star Duckweed
+ <i>Spirodela polyrhiza</i> (L.) Schleid.	Water Flaxseed
LILIACEAE	LILY FAMILY
<i>Allium canadense</i> L.	Wild Onion
+ * <i>Asparagus officinalis</i> L.	Garden Asparagus
<i>Erythronium albidum</i> Nutt.	Trout Lily
+ * <i>Lilium tigrinum</i> Ker.	Tiger Lily
+ <i>Polygonatum biflorum</i> (Walt.) Ell.	Solomon's Seal
+ <i>Smilax hispida</i> Muhl.	Greenbrier
ORCHIDACEAE	ORCHID FAMILY
<i>Corallorhiza odontorhiza</i> (Willd.) Nutt.	Coral Root
+ <i>Orchis spectabilis</i> L.	Showy Orchis
PONTEDERIACEAE	PICKEREL-WEED FAMILY
<i>Heteranthera limosa</i> (Sw.) Willd.	Mud Plantain
POTAMOGETONACEAE	PONDWEED FAMILY
+ <i>Potamogeton foliosus</i> Raf.	
<i>Potamogeton illinoensis</i> Morong	Illinois Pondweed
+ <i>Potamogeton nodosus</i> Poir.	
+ <i>Potamogeton pectinatus</i> L.	
+ <i>Potamogeton pusillus</i> L.	Sago Pondweed
<i>Potamogeton zosteriformis</i> Fern.	Flat-stem Pondweed
SPARGANIACEAE	BUR-REED FAMILY
+ <i>Sparganium eurycarpum</i> Engelm.	Bur-reed
TYPHACEAE	CATTAIL FAMILY
+ <i>Typha latifolia</i> L.	Common Cattail
+ <i>Typha X glauca</i> Godr.	Hybrid Cattail

SUMMARY DATA

	County Flora	Foray 1977
FAMILIES	97	71
GENERA	297	153
SPECIES	550	230

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The Bryophyte Flora of Fremont County, Iowa

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The bryophyte flora of Iowa is rather well known, but additions to the state list and county lists continue to be made (Peck, 1976; 1977). As part of the 1977 Foray to Fremont County, Iowa, one of us (JHP) made an extensive series of collections from Waubesa State Park, Washington Township. Less systematic collecting was conducted along drainage ditches and floodplain woods in Washington Township. Identifications of these collections were made by one of us (FDB), and the results compared with the flora reported by Conard (1956). Thirty-five species were collected during the foray, including 19 species not previously known from the county. The 19 county records included two state records (*Fissidens osmundoides*, and *Frullania brittoniae*) as well as the second report of *Tortella tortuosa* and the third report of *Leskeella nervosa* in Iowa. In addition seven records reflected a significant westward extension of the Iowa distribution of those species.

In this report we present a county bryophyte flora that includes the 40 species reported by Conard (1956) and the 19 records added during Foray 1977. Species collected during the foray were denoted with a single plus sign (+), while county records were noted with a double plus sign (++). Fifty-nine bryophytes are now known from Fremont County, including 51 mosses, 7 liverworts and one hornwort. We feel that additional records can be made by further collecting in Fremont County. Nomenclature follows that presented in Crum, Steere, and Anderson (1973) and Schuster (1977).

SYSTEMATIC LIST

Mosses

AMBLYSTEGIACEAE

- + *Amblystegium varium* (Hedw.)
Lindb.
- Amblystegium varium* (Hedw.)
Lindb. var. *ovatum* (Grout)
Grout
- Campylium hispidulum* (Brid.)
Mitt.
- + *Hygroamblystegium tenax*
(Hedw.) Jaeg. & Sauerb.
- Leptodictyum brevipes* (Card. &
Ther. ex Holz.) Broth.
- Leptodictyum riparium* (Hedw.)
Warnst.
- + *Leptodictyum trichopodium*
(Schultz) Warnst.

BRACHYTHECIACEAE

- Brachythecium acuminatum*
(Hedw.) Aust.
- + *Brachythecium oxycladon*
(Brid.) Jeg. & Sauerb.
- Brachythecium salesbrosum*
(Web. & Mohr) B.S.G.
- + *Bryhnia graminicolor* (Brid.)
Grout
- Eurhynchium hians* (Hedw.)
Sande Lac.
- + *Eurhynchium puchellum*
(Hedw.) Jenn.
- ++ *Rhynchostegiella compacta* (C.
Muell.) Loeske
- Rhynchostegium serrulatum*
(Hedw.) Jaeg. & Sauerb.

BRYACEAE

- Bryum argenteum* Hedw.
*Bryum caespiticiu*m Hedw.
 ++*Bryum lisae* De Not var. *cuspidatum* (B.S.G.) Marg.
 ++*Bryum pseudotriquetrum* (Hedw.) Gaertn., Meyer & Scherb.
 ++*Pohlia nutans* (Hedw.) Lindb.
 DICRANACEAE
 ++*Dicranella varia* (Hedw.) Schimp.

DITRICHACEAE

- Ceratodon purpureus* (Hedw.) Brid.

ENTODONTACEAE

- Entodon challengeri* (Par.) Card.
 ++*Entodon cladorrhizans* (Hedw.) C. Muell.
 ++*Entodon seductrix* (Hedw.) C. Muell.

FABRONIACEAE

- Fabronia ciliaris* (Brid.) Brid.

FISSIDENTACEAE

- ++*Fissidens osmundoides* Hedw.
Fissidens taxifolius Hedw.
Fissidens viridulus (Sw.) Wahlenb.

FUNARIACEAE

- Funaria hygrometrica* Hedw.
Physcomitrium pyriforme (Hedw.) Hampe

HYPNACEAE

- ++*Callicladium haldanianum* (Grev.) Crum
 ++*Platygyrium repens* (Brid.) B.S.G.
 ++*Pylaisiella selwynii* (Kindb.) Crum, Steere & Anderson
Taxiphyllum deplanatum (Bruch & Schimp. ex Sul.) Fleisch.

LESKEACEAE

- +*Leskea gracilescens* Hedw.
 ++*Leskea obscura* Hedw.
 ++*Leskeella nervosa* (Brid.) Loeske

MNIACEAE

- +*Mnium cuspidatum* Hedw.
Mnium stellare Hedw.

ORTHOTRICHACEAE

- +*Orthotrichum pumilum* Sw.

POLYTRICHACEAE

- Atrichum altecristatum* (Ren. & Card.) Irel.
 ++*Atrichum angustatum* (Brid.) B.S.G.

POTTIACEAE

- ++*Barbula fallax* Hedw.
Barbula unguiculata Hedw.
 ++*Desmatodon obtusifolius* (Schwaegr.) Schimp.
 ++*Tortella tortuosa* (Hedw.) Limpr.
Weissia controversa Hedw.

THUIDIACEAE

- +*Anomodon minor* (Hedw.) Fuernr.
 +*Haplocladium virginianum* (Brid.) Broth.

TIMMIACEAE

- +*Timmia megapolitana* Hedw.

Liverworts

CONOCEPHALACEAE

- +*Conocephalum conicum* (L.) Dumort.

FRULLANIACEAE

- ++*Frullania brittoniae* Evans
 ++*Frullania eboracensis* Gottsche
Frullania inflata Gottsche

LOPHOCOLEACEAE

- Lophocolea heterophylla* (Schrad.) Dumort.

REBOULIACEAE

- Reboulia hemisphaerica* (L.) G. L. & N.

RICCIACEAE

- Riccia fluitans* L.

Hornworts

ANTHOCEROTACEAE

- ++*Phaeoceros laevis* (L.) Prosk.

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Preliminary List of Lichens of Fremont County, Iowa

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The following is a preliminary list of lichens of Fremont County, Iowa, as represented by the collections made during the foray and during a subsequent brief visit to Waubonsie State Park. Intensive collecting was not done and further collections will undoubtedly add to the list, as can be seen by the absence from the list of some lichens widespread in Iowa. Lack of rock outcrops and low rainfall in this part of the state both contribute to a somewhat depauperate lichen flora.

Because of the complexity of certain genera of crustose lichens, these were identified only to genus. Nomenclature follows Hale and Culbertson 1970.

Graphidaceae

Graphis scripta (L.) Ach.

Parmeliaceae

Candelaria concolor (Dicks.) B. Stein

C. fibrosa (Fr.) Mull. Arg.

Parmella aureulenta Tuck.

P. rudecta Ach.

Pertusariaceae

Pertusaria sp.

Physciaceae

Physcia aipolia (Ehrh.) Hampe

P. ciliata (Hoffn.) Du Rietz

(Neck.) Poetsch

P. orbicularis

P. stellaris (L.) Nyl.

P. millegrana Degel.

P. tribacoides Nyl.

Physciopsis elaeina (Sm.) Poelt.

Physciopsis syncolla (Tuck. ex Nyl.) Poelt.

Physconia detera (Nyl.) Poelt

Teloschistaceae

Xanthoria fallax (Hepp) Arn.

X. candelaria (L.) Th. Fr.

Opegraphaceae

Opegrapha sp.

Verrucariaceae

Dermatocarpon hepaticum (Ach.) Th. Fr.

Fungi Imperfecti

Lepraria membranacea (Dicks.) Vain.

The Butterflies of Fremont County, Iowa and the Cabbage Principle

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Table 1 summarizes the known published records of butterflies collected in Fremont County, together with data from most of the state's large butterfly collections, both public and private. Also given on the table is a summary of the dates of collection (indicated in 10 day periods) of adults from which season flight data may be inferred. Fremont County collecting dates are indicated by the letter "x" or if they were collected during the recent foray, by an "F", while dates of

collections from other areas in the state are shown with the letter "o". The skewness of the x's toward the April-May part of the season is an accident of sampling, presumably due to the sparsity of collecting in the county, and the netting of most of the species on similar dates. Had we only Fremont County records, our view of flight duration of the species involved might be considerably distorted.

As can be noted on Table 1 (letter "F"), twenty of the species now recorded from Fremont County were taken during the foray conducted June 3-7 and eight of these are new county records.

An additional thirty butterfly species known to have a widespread distribution throughout the state, and which are to be expected in Fremont County, are listed in Table 2. Notice that perhaps our most common butterflies such as the imported or European Cabbage Butterfly, *Pieris rapae*, and the Painted Lady, *Vanessa cardui*, have not been reported from the county as yet, and are also lacking in the major collections survey! It is also anticipated that many less common, rare, and transient species will eventually be located in the area. Thus, perhaps fewer than half of the expected butterfly species have been collected in the county to the present time. One-hundred thirty-two species are presently recognized as having been collected in the state.

The apparent absence of many species in the county is an illusion created by the lack of intensive collecting. Several state lists have appeared (Scudder, 1869; Parker, 1870; Osborn, 1890; Lindsay, 1917), but Fremont County records are not identified. It might be expected that counties in which there are resident Lepidopterists might have the most recorded species. In Iowa this would appear to be so: for example, Cass (Pellet, 1915); Linn (Berry, 1914); Muscatine (Walton, 1878); Scott (Putnam, 1876); Winneshiek (Porter, 1908); and Woodbury Counties (Lindsey, 1915). Elsewhere (Downey, 1966, pg. 165), I have noted that there is no correlation of published county collecting records from those counties in which there are institutions of higher learning, even those with relatively large collections and which teach entomology courses. However, Black Hawk, Johnson and Story Counties, the sites of the state Regents Universities, have also had resident collectors at one time or another, and all have rather extensive lists of butterfly species, not all of which have as yet been published.

In the case of Fremont County, I know of no published resident lepidopterists, or institutions of higher learning with entomological courses within the county, but the natural areas, such as Waubonsie State Park, have provided an attraction to several recent collectors (Downey, Heitzman, Miller, Roosa and Voss) and resulted in several new state records (Miller, 1961). With several unique vegetational features, such as yucca, one might predict that associated new and interesting Iowa records such as the yucca feeding Megathymidae, will eventually be collected in the county. Further, the occurrence of *Hesperia ottoe*, *Staphylus hayhursti* and *Panhiades m - album* in Waubonsie State Park, all of which have only one or two other captures within the state, indicate a degree of endemism not shown in other areas of the state. Much more collecting needs to be accomplished in the county.

In addition to providing some preliminary information on the butterflies of Fremont County, I would like to call attention to what might be called an "error of arrogance", our willingness, when we know a little about the organisms in an area, to assume we know a lot more than we do. That is, because we can record the capture of those rare Iowa butterflies in the county, we might be misled into thinking we know all the rest of the information about the butterflies of the area. Quite naturally, we usually tell of what we do know, rather than allude to what we

TABLE 1 BUTTERFLIES OF FREMONT COUNTY, IOWA

SPECIES	COMMON NAME	ADULT FLIGHT PERIOD								SOURCE
		APR	MAY	JUN	JUL	AUG	SEP	OCT		
HESPERIIDAE										
Amblyscirtes vialis (Edw.)	Roadside Skipper	x	00		0	0				Heitzman, 1963
Atrytonopsis bianna (Scud.)	Dusted Skipper		x	F						
Euphyes vestris metacomet (Harris)	Dun Skipper		x	00	000	00				
Poanes hobomock (Harris)	Hobomock Skipper		x	000	0					
Polltes coras (Cram.)	Peck's Skipper	0x	000	00	000	0	0	0		
Polltes themistocles (Lair.)	Tawny-edged Skipper		0	00x	000	000	0			
Hesperia ottoe Edw.	Ottoo Skipper			x0	0					
Pholisora catullus (Fabr.)	Common Sooty-wing		0x	00	000	000				
Pyrgus communis communis (Grote)	Checkered Skipper			F00	000	000	0	0	0	new, foray
Erynnis brizo brizo (Bdv. & LeC.)	Sleepy Dusky-wing	0x	x0							Heitzman, 1963
Erynnis martialis (Scud.)	Mottled Dusky-wing		x	x	00	0				Burns, 1964
Erynnis horailus (Scud & Burg.)	Horace's Dusky-wing	x	xx	000	0	x	0			Burns, 1964
Erynnis juvenalis juvenalis (Fabr.)	Juvenal's Dusky-wing	x	x0	00						Burns, 1964
Staphylus hayhursti (Edw.)	Southern Sooty-wing		x	00	0	00				
Thorybes bathyllus (Smith)	Southern Cloudy-wing		0	00	00	00	x			
Thorybes pylades pylades (Scud.)	Northern Cloudy-wing		x	F00	0	0				
Achalarus lyciades (Geyer)	Hoary Edge		xx	x						Miller, 1961
Epargyreus clarus (Cram.)	Silver Spotted Skipper		x	000	000	000	0			
PAPILIONIDAE										
Papilio polyxenes asterius Stoll.	Black or Parsnip Swallowtail		00	x00	0	0	000	0		
Papilio cressphontes Cram.	Giant Swallowtail		x	00	00	000				Heitzman, 1967
Papilio glaucus glaucus Linn.	Tiger Swallowtail	0	000	x0	000	000				Heitzman, 1967
Eurytides marcellus (Cram.)	Zebra Swallowtail	x	00	Fx	0					Heitzman, 1963
PIERIDAE										
Collas eurytheme Bdv	Alfalfa Butterfly, Grange Sulpher		00	x00	000	000	000	000		
Collas philodice philodice Godt.	Common or Clouded Sulpher	0	0	x	F00	000	000	000	0	
Collas cesonia cesonia (Stoll.)	Dog Face			x0	0	00	0	0		
Euchloe olympia (Edw.)	Olympia	x	0							Heitzman, 1963
LYCAENIDAE										
Harknessia titus titus (Fabr.)	Coral Hairstreak			F	0	000				new, foray
Satyrus calanus falacer (Godt.)	Banded Hairstreak			F00	000					new, foray
Satyrus caryaevorus (McD.)	Hickory Hairstreak				x	0				Miller, 1961; Voss, 1961
Callophrys henrici turneri Clench	Henry's Elfin	x	x							Voss, 1961; Heitzman, 1963
Panthiades m-album (Bdv & LeC.)	White-M Hairstreak		0	x	0					Miller, 1961; Voss, 1961
Steynon melinus humuli (Harris)	Gray Hairstreak		x	x	0	000	0	0	0	
Lycena hylus (Cram.) (thoe Guerin-Mene)	Bronze Copper			F00	000	000	0	0		new, foray
Lycena xanthoides dione (Scud.)	Great Copper			F00	000	000	000			new, foray
Everes comyntas comyntas (Godt.)	Eastern Tailed Blue		00x	000	000	000	000			
Celastrina argiolus pseudargiolus (Bdv. & LeC.)	Spring Azure	00	0	Fx0	000	000	00			
NYMPHALIDAE										
Asterocampa celitis celitis (Bdv. & LeC.)	Hackberry Butterfly		0	F00	000	000				
Limenitis arthemis astyanax (Fabr.)	Red Spotted Purple			F00	000	000	0			
Vanessa atalanta rubria (Fruhst.)	Red Admiral	0	00x	F00	000	000	0			
Nymphalis antiopa (Linn.)	Mourning Cloak	0	000	F	0	0	0	0	0	
Polygonia interrogationis (Fabr.)	Question Mark		000	0x0	000	000	00	0	0	Heitzman, 1967
Polygonia comma (Harris)	Hop Merchant, Comma	00	000	0x0	000	0	0	0	0	Heitzman, 1967
Polygonia prognote (Cram.)	Gray Comma	000		x0	0	00	000	00		Heitzman, 1967
Chlosyne mycales mycales (Dibdy.)	Silver Checkerspot			F00	000	00				new, foray
Chlosyne gorgone carlota (Reak.)	Gorgone Checkerspot		0	0	Fx0	000	000			
Phyciodes tharos (Drury)	Pearl Crescent		000	F00	000	000	000	0		new, foray
Speyeria idalia (Drury)	Regal Fritillary			0x	000	00	0			
Speyeria cybele cybele (Fabr.)	Great Spangled Fritillary			F00	000	000	0	0		new, foray
Speyeria aphrodite (Fabr.)	Aphrodite			00	0x0	00	0			
DANAIDAE										
Danaus plexippus (Linn.)	Monarch, Milkweed Butterfly		x	F00	000	000	000	000		
SATYRIDAE										
Megisto cymela cymela (Cram.)	Little Wood Satyr		0	Fx0	000	0				
Cercyonis pegala olympus (Edw.)	Wood Nymph, Grayling			0	000	x00	0			

* County records indicated by an "x" or an "F" (if collected during the foray); zeros represent flight data for other lowa counties indicated by 10 day periods

* County records indicated by an "x" or an "F" (if collected during the foray); zeros represent flight data for other Iowa counties indicated by 10 day periods

don't know concerning an area, but most of us are guilty of jumping the gun of knowledge regarding an area. Perhaps in the case of butterflies, this type of error might be euphemistically called the "cabbage (butterfly) principle", and might be summarized by the following question. If we don't know anything about the spatial and temporal distribution of our very common species like the cabbage butterfly, how likely is it that we really know anything regarding the same items for our rare and endangered species?

The above caution derives from the tacit but unproved general assumption among naturalists that more is known about the birds and the butterflies of a given area, than about most other groups of animals and plants. No doubt this is due to the large number of avid amateur hobbyists and naturalists who are attracted to these "well-known" groups, and who have contributed so much to the science. On the other hand, even if this be only partially true, and if the well-known and Common Cabbage Butterfly has not been collected from Fremont County as yet, it makes one realize how little the furrow of knowledge has been ploughed.

What we are attempting to note, of course, is the lack of even the most elemental information about butterflies, from one of our most biological exciting

Table 2. List of butterflies of widespread distribution in Iowa which are expected to occur in Fremont County

<i>Lerodea eufala</i> (Edw.)	<i>Eurema nicippe</i> (Cram.)
<i>Euphyes bimacula</i> (Gr. & Rob.)	<i>Nathalis iole</i> Bdv.
<i>Atrytone arogos iowa</i> (Scud.)	<i>Satyrrium liparops strigosa</i> (Harris)
<i>Atrytone delaware delaware</i> (Edw.)	<i>Satyrrium acadica acadica</i> (Edw.)
<i>Atalopedes campestris</i> (Bdv.)	<i>Lycaena phlaeas americana</i> Harris
<i>Pompeius verna verna</i> (Edw.)	<i>Hemiargus isola alce</i> (Edw.)
<i>Wallengrenia egeremet</i> (Scud.)	<i>Libytheana bachmannii bachmannii</i> (Kirtl.)
<i>Polites origenes origenes</i> (Fabr.)	<i>Asterocampa clyton</i> (Bdv. & LeC.)
<i>Polites mystic</i> (Edw.)	<i>Limenitis archippus archippus</i> (Cram.)
<i>Hylephila phyleus phyleus</i> (Drury)	<i>Vanessa virginiensis</i> (Drury)
<i>Anclyoxypha numitor</i> (Fabr.)	<i>Vanessa cardui</i> (Linn.)
<i>Pieris protodice</i> Bdv. & LeC.	<i>Precis coenia</i> (Hubn.)
<i>Pieris rapae</i> (Linn.)	<i>Euptoietia claudia</i> (Cram.)
<i>Phoebis sennae eubule</i> (Linn.)	<i>Lethe portlandia</i> (Fabr.)
<i>Eurema mexicana</i> Bdv.)	
<i>Eurema lisa lisa</i> (Bdv. & LeC.)	

counties, and to challenge collectors with the vast amount of work needed to be done. A hoped for corollary, particularly profitable to the non-lepidopterist, is that even our (supposedly) best known groups have woefully inadequate data on which to build worthwhile ecological platforms. If we cannot contribute data on *Pieris rapae* Linn. in Fremont County, what implications has this for the study of our less common, rare and possible endangered kinds? Admittedly, many collectors will overlook the extremely common kinds of things in their search for "more productive and interesting" biological finds, and the latter might be more likely to be published, thus skewing the data. Our point in the "cabbage-principle" however, is that even if we do know of the presence of one or two rare species in an area, one should not jump to the conclusion that all other information is also known about those species or their more common relatives in the same region. Further, the most significant of the biological assessments in restricted localities are likely to be derived from the composite representatives of major taxa, as well as their cyclic fluctuations, particularly apparent with the more common kinds of organisms.

While we might over-generalize about these "generalizations", the cabbage-principle at least cautions us that we need much more basic work on even our "best-known" groups, before we can call significant our baseline data on many of our natural areas.

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Productivity of Red-winged Blackbirds in Prairie Pothold Habitat

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Productivity of Red-winged Blackbirds (*Agelaius phoeniceus*) has been studied widely in North America (Case and Hewitt, 1963; Meanley and Webb, 1963; Young, 1963; Fankhauser, 1964; Brenner, 1966; Goddard and Board, 1967; Holcomb and Twiest, 1968; Miller, 1968; Robertson, 1972; Holm, 1973; Dolbeer, 1976), but scant information has been published on productivity of the species in marsh and upland habitats of the north central United States, a major breeding area. This study measured productivity of Red-winged Blackbirds in field and marsh habitats at the southern edge of the Prairie Pothole Region in northwest Iowa.

METHODS

Description of the study site. -- The study was conducted on the Barth Tract of the Spring Run Game Management Area (GMA), Center Grove Twp., Dickinson Co., Iowa. The area of approximately 200 ha is predominantly rolling grassland interspersed with small fields and marshes. Six marsh and three upland sites were selected for study. Marsh sites (nos. 1-6) were 0.04, 1.21, 5.26, 0.61, 0.57, and 1.62 ha, respectively, while two upland sites were fields measuring 6.39 and 3.36 ha. The

third upland site was a two-row Hackberry (*Celtis* sp.) planting approximately 900 m in length. Following the system of Stewart and Kantrud (1971), sites were all semi-permanent (Class IV) marshes. Smooth Bromegrass (*Bromus inermis*) and Alfalfa (*Medicago sativa*) were dominant plants of the upland sites studied. A more detailed description of the Spring Run GMA is presented by Krapu et al. (1970).

Field measurements. -- Field studies were conducted from late May through mid-July 1967. Overwater nests in emergent vegetation were located by systematically wading through the marsh at 2-4 day intervals. Upland nests were located through observation of territorial males and by systematically dragging an 18 m length of rope with weights at 1.6 m intervals over upland sites. Each nest was marked for relocation with white engineer's tape and a metal tag enscribed with the nest number; both were attached to stems approximately 1 m from the nest. Data recorded during the initial visit to an active nest site included: species, nest number, location of nest, date, vegetation type at nest site, number of Red-winged Blackbird and Brown-headed Cowbird eggs, and nest height above ground or water surface. Subsequent visits were made at 2-4 intervals until the nesting attempt was terminated. During each subsequent visit to a nest, the following data on state of nesting progress were recorded: number of eggs or nestlings; occurrence of egg loss or fledgling mortality and cause, if known.

Censuses were conducted on marsh 6 at regular intervals to determine number of females and production per territorial male. Territories were plotted for each male.

RESULTS AND DISCUSSION

Reproductive rate. -- Red-winged Blackbirds laid 441 eggs in 127 marsh and 28 upland nests, 189 hatched (42.9 percent) and 89 fledged (20.2 percent). Completed clutches ranged from 2-5 eggs and averaged 3.6.

Nest success at marsh and upland sites averaged 30 percent and 4 percent, respectively (Table 1). Hatching rate of eggs in marsh nests was approximately double those in upland nests. Nest success rates in marsh habitat were comparable to those reported in other regions but rates in upland habitat were markedly lower than reported elsewhere (Table 2).

Productivity of Red-winged Blackbirds on the study area seems low when viewed relative to the percentage of eggs that produced fledglings (Table 1). However, actual recruitment rate (young fledged per nesting female or per territory) was examined on marsh 6 and indicate a much higher degree of success than otherwise suggested. For example, eggs were laid in 33 nests built within territories of 9 males. Each of these males had from 1-3 females (Table 3). An estimated population of 20 females was present on the wetland and produced 15 broods; 2 females may have been double-brooded. Approximately one-half of the females were successful in their apparent initial nesting attempt and 65-75 percent of the females reared broods at a mean rate of 1.75 young per nesting female or 3.8 young per territorial male. In comparison, other studies have reported number of fledging young per male territory in marsh habitat as follows: 2.6-3.7 in New York (Case and Hewitt, 1963), 5.7 in Wisconsin (Beer and Tibbitts, 1950), and 8.1 in Maryland (Meanley and Webb, 1963).

Continued nesting, presumably renesting, enhanced productivity at marsh sites. A lack of marked females prevented a quantitative assessment of the level of renesting but other studies have reported its regular occurrence. Dolbeer (1976) reported a renesting rate of 19 percent in upland habitat in Ohio. Fankhauser (1964) working in the Coastal Plain in Maryland reported that Red-winged Blackbirds renested when the first nest was destroyed early in the season and in some

TABLE 1. Red-winged Blackbird productivity in various marsh and upland cover types.

Cover type	a	b	Total eggs	Percent hatched	c	Percent of eggs producing fledglings
	Number of nests	Percent nest success			Percent fledged	
Marsh d						
Cattail	48	35	147	52	49	25
Sedge	24	17	71	31	46	14
Burreed	23	25	49	61	63	39
River Bulrush	18	11	55	24	31	7
Slender Bulrush	12	42	38	61	48	29
Whitetop	2	100	8	88	86	75
Total	127	30	368	47	51	24
Upland						
Hackberry	16	6	40	20	25	5
Brome-alfalfa	10	0	28	21	0	0
Sweet Clover	1	0	1	0	0	0
Prairie Rose	1	0	1	0	0	0
Total	28	4	73	25	11	3

a Containing at least one egg.

b Fledging at least one young.

c Represent nestlings that fledged.

d Red-winged Blackbirds also nest in willows (*Salix* sp.) in the vicinity of study areas.

TABLE 2. Nest success and fledging rates reported in the literature are compared with those of the present study.

Locality	a	Percent nest success	c	Reference
	Number of nests		Percent fledged	
Upland				
New York	156	15-30	--	Case & Hewitt (1963)
Connecticut	162	34	26	Robertson (1972)
Ohio	186	31	---	Dolbeer (1976)
Iowa	28	4	3	Present study
Marsh				
Oklahoma	243	27	24	Goddard & Board (1976)
Wisconsin	518	29	23	Young (1963)
Connecticut	738	53	44	Robertson (1972)
Iowa	127	30	24	Present study

a Containing at least one egg.

b Fledging at least one young.

c Represents nestlings that fledged.

instances reared two broods. Case and Hewitt (1963), based on New York studies, indicated that a female usually started nesting within a few days after nest destruction in April or May but re-nesting gradually declined during June. During the present study, some males continued to defend territories into late July and nestlings were seen during the first week of August.

Factors affecting nest success. -- Cowbird parasitism presumably contributed

to the low nest success rates at upland sites; 29 percent of the upland nests were parasitized as compared to only 2 percent of the marsh nests. Parasitism appeared to trigger desertion; no cowbirds fledged from blackbird nests. In upland nests that did hatch, high mortality of nestlings occurred from starvation either because of desertion by females or an inadequate food supply. It is noteworthy that few new nests were initiated in the uplands after 20 June, whereas attempts in marsh habitat continued into late July. Voigts' (1973) observation that marsh nesting Red-winged Blackbirds at Rush Lake in northwest Iowa shifted from terrestrial to marsh foods after 20 June lends support to a hypothesis that changes in food availability may have contributed to early cessation of nesting in the uplands despite high nest losses from initial attempts.

Red-winged Blackbird nest success varied with the supporting cover type (Table 1). Nest location relative to shore and water depth appeared more important than plant species involved. Greater water depth at nest sites probably afforded increased protection from predators. Francis (1971) reviewed the studies of Meanley and Webb (1963) and Goddard and Board (1967) and concluded nest success is related to vegetative form but that plant species and growth stage within a single vegetative form have only a minor effect. Ten plant genera supported nests in fields and marshes on the Spring Run GMA. Additional plant genera probably were utilized as nest sites in northwest Iowa. Stowers et al. (1968) identified 30 plant genera supporting Red-winged Blackbird nests in habitats used at the southern edge of the species range in Florida, whereas only three were identified at the northern edge in subarctic Canada (Krapu, 1973). At the latter location, the species was restricted largely to wetland habitat.

There was no indication that nest height influenced nest success in either marsh or upland habitats. Height of upland nests ranged from 20.3-121.9 cm above ground and averaged 58.4 cm whereas marsh nests ranged from 12.7-91.4 cm above water and averaged 38.1 cm. Mean nest height (in cm) in the marsh cover types was as follows: Cattail (*Typha* sp.), 16.7; Sedge (*Carex* sp.), 14.4; Burreed (*Sparganium eurycarpum*), 11.5; River Bulrush (*Scirpus fluviatilis*), 16.4; Slender Bulrush (*S. heterochaetus*), 13.4; and Whitetop (*Scolochloa festuacea*), 17.0. Francis (1973) found nest height did not significantly affect Red-winged Blackbird nest success in Ohio studies.

Causes of egg and nestling loss were often difficult to identify during the study but mammalian predation appeared to be the principal cause of nest destruction. Several mammalian predators and sign were seen on the study area. Opossum (*Didelphis virginianus*) were observed during daylight hours searching marsh edge vegetation and Raccoon (*Procyon lotor*) sign was present in the vicinity of destroyed nests. Feral House Cats (*Felis domestica*) were seen on the area and one was observed carrying a juvenile Red-winged Blackbird. A 3.5 hour observation of hunting activity of a female Mink (*Mustela vison*) on marsh 6 on 6 July 1967 provided some insight into foraging patterns in pothole habitat and potential impact on nesting blackbirds. The Mink was first observed at 0815 leading five half-grown young through the upland toward the marsh. The female left the young in cattails at the marsh edge and began hunting. Although usually hidden from view a flock of hovering blackbirds marked its movements around the wetland.

The Mink circled the marsh twice during the forenoon. Approximately 0.5 hours after hunting began, an incubating Virginia Rail (*Rallus limicola*) was flushed from a marked nest containing 10 eggs. An hour later eight of the rail eggs were gone and presumably eaten. The Mink was observed bringing 2 Leopard Frogs (*Rana pipiens*) and a Meadow Vole (*Microtus pennsylvanicus*) back to the young. The three remaining active blackbird nests were not located during her forenoon

foray around the marsh but all the nestlings had disappeared by the following morning. The last active blackbird nest on marsh 6 was destroyed the night of 11-12 July when the nest contained four 5-day-old nestlings. The female Mink continued to forage in the vicinity of the marsh as late as 23 July. Eberhardt (1974) studied Mink food habits at rearing dens near marshes in central North Dakota and found that blackbirds comprised 3 percent of the avian prey.

TABLE 3. Red-winged Blackbird recruitment per territory on marsh no. 6 and relationship to no. of females and nests.

Territorial male no.	Estimated no. females	Total nests	No. fledged per territory
1	2 (0) a	4	0
2	3 (3)	5	6
3	2 (2)	2	5
4	3 (1)	7	3
5	2 (2)	4	5
6	3 (2)	4	4
7	3 (3)	3	7
8	1 (1)	2	2
9	1 (1)	2	3
Total	20 (15)	33	35

a Number of females that successfully reared broods is shown in parentheses.

TABLE 4. Red winged and Yellow-headed Blackbird productivity in the deep marsh zone.

Species	Number nests	Number eggs	Percent hatched	a Percent fledged	Percent of eggs producing fledgling
RWBB	48	136	56	37	21
YHBB	43	142	51	51	26

a Represents nestlings that fledged.

By cutting stems supporting nests, Muskrats (*Ondatra zibethicus*) caused the loss of one Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) and two Red-winged Blackbird nests. Garter Snakes (*Thamnophis radix*) entered blackbird nests and consumed some nestlings. In two separate incidents, Garter Snakes were observed devouring Yellow-headed Blackbird nestlings. Vegetative growth caused some overwater nests to tip sufficiently to cause eggs to fall into the water, particularly late in the nesting season. Thunderstorms accompanied by high winds caused some egg loss and nestling mortality at both upland and marsh sites. Fledgling blackbirds were found dead on nearby roads, apparently victims of collisions with motor vehicles.

Spatial distribution of Red-winged Blackbird territories and nests on certain study area marshes was affected by the concurrent presence of nesting populations of Yellow-headed Blackbirds. The Yellow-headed Blackbird through interspecific territoriality excludes Red-winged Blackbirds from central marsh habitat in areas where the species are sympatric (Orians and Willson, 1964; Weller and Spatcher, 1965). Interspecific competition seems to exclude Red-winged Blackbirds from broad areas of relatively secure central marsh habitat that would otherwise be utilized. Productivity of Red-winged and Yellow-headed Blackbirds

nesting in peripheral and central locations, respectively, of the deep marsh zone is shown in Table 4. Yellow-headed Blackbird hatching success was 4 percent less but survival to fledging was 14 percent greater than recorded for Red-winged Blackbirds.

SUMMARY

Productivity of the Red-winged Blackbird was studied at six marsh and three upland sites on a 200 ha game management area in northwest Iowa. Nest success, egg hatching, and fledging rates averaged 4 percent, 25 percent, and 3 percent on uplands and 30 percent, 47 percent, and 24 percent in marshes, respectively. Poor reproductive success in upland habitat resulted when nesting was terminated in mid-June following an initial failure. Cowbirds parasitized 29 percent of the upland nests and 2 percent of the marsh nests. Red-winged Blackbird fledgling rate in the deep marsh zone of semi-permanent marshes was 14 percent below that of Yellow-headed Blackbirds.

ACKNOWLEDGEMENTS

I thank Raymond J. Greenwood for critically reviewing the manuscript, Milton W. Weller for support and useful advice throughout the study and David R. Parsons for assistance in collection of field data. Data were collected while I was employed by the Iowa Conservation Commission in waterfowl studies under Pittman-Robertson Project W-105-R.

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1977 Ia. Christmas Bird Count Summary

ROSS SILCOCK
MALVERN

Reports were received from 31 localities this year, one less than in 1976. Losses were Pine Hollow (cancelled due to severe weather), Wapsipinicon River Valley (also a weather casualty with only six hours in the field), and Webster City. Several other counts were definitely hampered by weather, Des Moines and Iowa City among them. Much welcomed new counts this year are DeSoto NWR and Mason City. There were three name changes, two due to small shifts in count circles: Larrabee moved a couple miles south and became Cherokee, and Wheatland moved about 8 miles north and became Lost Nation. Bentonsport is now known as Keosauqua.

Davenport again led all counts with 67 species, but a close challenge was made by Dubuque with 64, an outstandingly complete count - an example of what can be done with close coverage by good observers.

Participants were down to 453 from last year's record 484, probably weather-related, as was the drop for the second straight year in the total species count. This

year 110 were recorded, down from last year's 115 and the record 116 in 1975. The drop is apparently due to chance misses of a few rare species, as shown under "Notable Misses", below.

This year's prize for the most unusual happening on a CBC definitely goes to the Red Rock group, who were surprised upon returning to their parked cars by several officers of the law who were interested in their activities in the area. It seems a dead body had been located nearby and the entire birding group became suspects, were interrogated, and subsequently released after a two-hour delay. Little did Compiler Stravers suspect that the body was planted by the Shenandoah group, who wanted to delay the Red Rock count and beat them this year.

Species Comments

This section will discuss species reports about which I have some reservations, or would like to comment upon. All are marked in the Table with an asterisk. Of course, comments are welcome. Please do not construe this as personal criticism; it is meant to be constructive.

American Bittern: The DeSoto compiler reported an American Bittern the documentation which included the following descriptive section: "Bird flew in front of vehicle at about 30 yards and landed in tree approximately 150 yards away. Typical bittern outline. Broad short wings, dark brown coloration, slow measured wingbeats."

This does not eliminate Black-crowned Night Heron, which is as likely as American Bittern in the Missouri Valley in early winter. Indeed, the fact that the bird landed in a tree suggests that it was a Night Heron, the most likely species being the Black-crowned. Conclusive field marks for American Bittern (black whisker mark and dark primaries in flight) were not noted. Furthermore, the Night Heron flies with slower wingbeats than the American Bittern and has shorter, broader wings.

Considering the above, I submit that this bird was just as likely to have been a Black-crowned Night Heron (immature).

Red-breasted Merganser: One was reported from Omaha with no details. Males are readily identified, but females must be carefully separated from female Common Mergansers. Details should be provided.

Northern Goshawk: One was reported from Lost Nation, with good details. Acceptance of N. Goshawk reports requires separation from Cooper's Hawk. Brown-plumaged birds are very difficult to separate in the field.

Swainson's Hawk: Only one was reported this year, from DeSoto NWR. It was identified as a dark-phase Swainson's Hawk on the basis of its generally brown coloration and its white throat. While the identification may be correct, I have doubts, based on the following:

(a) The dark phase is rare, even at optimum occurrence times for the species.

(b) No mention was made in the details provided of tail pattern or underwing pattern. If well seen, this information could help eliminate, for example, an immature dark-phase Red-tailed Hawk (note that immature Red-tails do have barred tails) or one of the wide range of plumages of the Rough-legged Hawk, both species being very common this year.

(c) There has never been a specimen of Swainson's Hawk taken in winter north of Texas in the central United States (see Browning, *American Birds* 28:865).

(d) Specimens indicate that some 82 percent of those birds found in the United States in winter are immatures, which are very difficult, if not impossible, to identify in the field (see also Browning).

(e) If indeed any Swainson's Hawks occur this far north in winter, are we calmly identifying the 82 percent of these which are immatures as something else?

Very few counts report "*Buteo sp.*"; this year only Iowa City and Omaha did so. Furthermore, if only 18 percent of the Swainson's Hawks occurring in winter in the United States are adults, then one could assume that the 11 reports in the last ten Iowa CBC's could be extrapolated to include the 50 immatures which were misidentified as something else. I submit that there just are not this many Swainson's Hawks in Iowa in winter, if any.

Golden Eagle: The three individuals reported (with excellent details may in fact be two, as Petersen suggests that the Princeton and Davenport birds may have been the same; their plumages appeared to be identical.

"Red-shafted" Flicker: Reported from three localities, but included with Common Flicker in the Table. DeSoto NWR had five, Mason City one, and Omaha three.

Savannah, Field, and Lincoln's Sparrows: The only report of Savannah Sparrow was from DeSoto, with excellent details provided. However a Field Sparrow was reported from Lamoni, but no details were given. A Lincoln's Sparrow was found at Muscatine, well described. Details must be provided for each of these species, as well as Chipping Sparrow, which was not reported this year. See also Vesper Sparrow, below.

Vesper Sparrow: Five were reported from Ottumwa, without details. As this is not a difficult bird to identify when the white tail-feathers are seen, it should be simple to document. Identification becomes risky without seeing these white feathers. There are several Iowa CBC reports of this species, but only two were documented: one well-described at Clinton in 1962, and one poorly described from Davenport in 1964, when four were "closely observed by Elton Fawks". Such documentation depends heavily on the ability of the observer, who, however, may not be known to the compiler (in this case I am convinced).

"Oregon Junco": Reported from DeSoto NWR (1) and Omaha (4), but included with Northern Junco in the Table.

Best Birds

According to past CBC data, the following may be the best finds for 1977:

(a) **Swan sp:** This is the first Iowa CBC report of a swan, found at Riverton on the Shenandoah count. Some apparently were seen during the count period at IBL 42:12). The possibility remains that the Riverton swan could have been a Trumpeter (see longer note).

(b) **American Bittern:** The controversial DeSoto bird. If this bird was indeed an American Bittern, it would be the third Iowa CBC report. If a Black-crowned Night Heron, the second Iowa CBC report.

(c) **Greater White-fronted Goose:** Also only the second Iowa CBC report, and also from DeSoto NWR. The first was reported from Omaha, indicating that these birds linger with Snow Geese.

(d) **Pine Grosbeak:** Although the fourth Iowa CBC report, this may be the "Bird of the Year" due to its general rarity at any time in Iowa. See under "Population Comments".

Notable Misses

Perhaps most surprising is Red Crossbill, in light of the increased numbers of finches in the State this year. It was however reported during the count period at Decorah. Two other species seen during the count period but missed on count day were Pied-billed Grebe and Bufflehead, both at Dubuque. These species and others

which have been seen more than five times in the last ten years are listed below:

Pied-billed Grebe	seen	8	years	Ruby-crowned Kinglet	seen	9	years
Bufflehead		6		Yellow-rumped Warbler		6	
Hooded Merganser		8		Red Crossbill		7	
Hermit Thrush		7					

Population Comments

Pine Grosbeak: This is only the fourth time this species has been recorded on an Iowa CBC, yet this year it was found at three localities (Cedar Rapids, Dubuque, and Yellow River Forest) for a total of 43 individuals. At present the invasion appears to be restricted to the northeast, but as winter progresses, more may be found further south and west. I have an unconfirmed report of one at Omaha. The previous reports were in 1972, one at Muscatine, 1964 (12 at Davenport) and 1954 (15 at Dubuque and one at Pine Hollow).

Other Winter Finches: Numbers are definitely up for three of these species, although hardly at invasion levels. This year's totals are about the same as those of 1975:

	1977	1976	1975	1974
Evening Grosbeak	25	2	134	11
Common Redpoll	468	20	432	4
Pine Siskin	466	53	599	15

Purple Finch numbers are about the same as last year's, but far below the banner year of 1974:

Purple Finch	511	632	380	1275
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Diurnal Raptors: Of the four most common in Iowa in winter (Red-tailed and Rough-legged Hawks, Bald Eagle, and American Kestrel), number of the first three were sharply higher this year, the Kestrel about average. Comparing this year's totals with the average number present 1974-76, Rough-legged Hawk was up 155 percent, Red-tailed up 58 percent, and Bald Eagle up 82 percent. There seem to be more immature Red-tails in the state this year, suggesting that the entire population may be wintering further north (immatures generally winter further south than adults). Possible the rodent population is at a high level in this area, which also would explain the extremely high numbers of Rough-legged Hawks present. The Bald Eagle story seems to improve each year, this year's total of 489 easily beating last year's CBC record of 297. The numbers of immatures seen would indicate good breeding success in recent years.

Field Flocking Birds: Included here are Horned Lark, Lapland Longspur, and Snow Bunting, all of which showed massive increases this year.

	This year	Prior 3-year averages
Horned Lark	5099	680
Lapland Longspur	1749	145
Snow Bunting	574	84

The addition of the DeSoto count greatly helped the totals for Horned Lark and Lapland Longspur, but did not contribute to the Snow Bunting total, indicating that there indeed was a build-up in number of these species.

American Robin: This species also showed a marked increase over its prior three-year average: 1108 compared to the average of 219, a five-fold increase. At least in southwest Iowa these birds were abundant around multiflora hedges in the refuges.

Significant Decreases: Three species fell into this category:

	This year	Prior 3-year average
Mourning Dove	773	1297
Red-headed Woodpecker	159	690
Carolina Wren	9	26

The Carolina Wren probably is showing the effects of last year's severe winter, a well-known environmental hazard for this species. Heavy snows in much of the state have probably driven the Mourning Doves south as their ground-feeding habits were curtailed. Last year's Red-headed Woodpecker numbers were markedly increased despite the cold winter, probably because of birds moving south from Minnesota (see last year's CBC summary), thus increasing the prior three-year average. However this does not entirely explain this year's decrease.

Rock Dove: As suspected, this species does occur at all locations, being reported from all this year for the first time for a grand (?) total of 6916 individuals. We will now be able to chart its progress, hopefully downward.

1. ALLEMAN (15 mile diameter circle centered on Alleman and including Big Creek Lake, Chichaqua Wildlife Refuge, Jester Park, Saylorville Dam north to Jester Park, and areas between these locations) Dec. 19; 6 a.m. to 5 p.m. Temp. 25-30; wind: NW. Overcast, moderate to heavy snow in afternoon, 1 to 2 inches old snow at start, no open water seen.

Observers (3) in 1 party: Dean Mosman (compiler), Diane and Mike Mosman.

Details of unusual observations: Red-shouldered Hawk seen at north end of Big Creek Lake. One Evening Grosbeak coming to feeder.

Other species seen during census period: Common Redpolls also seen.

Comments: Tape recordings used to attract owls. Red-headed Woodpeckers missing from count area.

2. BURLINGTON (A 15-mile diameter circle centered on highway 99 at Flint Creek bridge and including Lock and Dam 18, Crystal and Carthage Lakes and Mississippi River bottoms) Dec. 31: 7:30 a.m. to 5 p.m. Temp. 24-35; wind: 10 mph from N. Overcast, light fog in morning, snow beginning mid-afternoon; snow cover 0 to 1 in.; Mississippi channel open, other water frozen.

Observers (9) in 5 parties: Bruce and Catherine Bosley, Christina Cowles, Charles and Jane Fuller, Barry Geng, Anna Mae and Peter Lowther, and Gil Miller.

Other species seen during census period: Red-breasted Nuthatch, Pine Siskin, Field Sparrow.

3. CEDAR RAPIDS (15 mile diameter centered on Federal Building including Cedar Lake area, Marion Springs, Cedar River, woodlands, orchards, nurseries, roadsides, city parks, same as in previous years.) Dec. 17: 6:45 a.m. to 5 p.m. Temp. 46 to 37; wind: 5-15 mph from SE. five percent snow concentrated in ditches; overcast with intermittent rain.

Observers (29) in 5 parties: Leroy Bata, Rob Bradley, Dr. Duane Carr, Floy Erickson, Irene M. Haerther, Vickie Hixson, Jim Kettlekamp, Beryl Layton, Lucile Liljedahl, Brian Nelson, Weir Nelson, Mr. and Mrs. Fred Nissen, Roberta Oppendahl, Mr. and Mrs. Bert Rosenberg, Joan Sanders, Lillian Serbousek (compiler), Bobbie Shaffer, Fred Thompson, Dr. and Mrs. Robert Vane, Rob Vane, Dr. and Mrs. Peter Wickham, Nancy Wickham, Myra G. Willis and Mr. and Mrs. Aldrich Zobac.

Details of unusual observations: Pine Grosbeak, seen about ¼ block away in bare tree and again in pine near by. Visibility overcast but able to make accurate identification.

Other species seen during census period: Brown Thrasher, Common Redpoll.

4. CHEROKEE (15 mile diameter circle centered on U.S. 59 2 miles south of Larrabee to include Martins Access, Little Sioux River, Mill Creek, and the Cherokee Sewage lagoon) Dec. 18: 8 a.m. to 4:30 p.m. Temp. 25-33; wind: 5-15 mph from W-NW. Partly cloudy, no snow cover with 90 percent of the streams and 100 percent of the lakes frozen over.

Observers (10) in 4 parties: Horace and Mary Autenrieth, Judy Bierman, Dick

Bierman (compiler), Joe Beals, Sandy Beals, Marion Brewer, Larry Farmer, Pat Williams, plus Mildred Thompson at her feeder.

Comments: Woodpeckers and nuthatches seem to have finally recovered since the January 1975 blizzard.

5. CLINTON (15 mile diameter circle centered on Elk River Jct., Iowa, same as previous years.) Jan. 1: 6:30 a.m. to 5:30 p.m. Temp. 3 to 20; wind: 15-30 mph from NW. Overcast, clearing late AM snow flurries early A.M., 6" new drifted snow over old drifts, river 90 percent ice covered.

Observers (8) in 3 parties: Joel Ellefson, Fred Leshner, Mary Lou and Peter Petersen (compiler), Ernie and Rozi Sadler, William Smith and Paul Van Nieuwenhuysse.

Comments: Fresh snow brought Horned Larks, Lapland Longspurs and Snow Buntings to roads.

6. DAVENPORT (15 mile diameter circle, centered on former toll house location on the I 74 bridge, same as previous years.) Dec. 18: 5 a.m. to 5 p.m. Temp. 28 to 35; wind: 5-15 mph from NW. Overcast, ground bare, river 20 percent ice covered.

Observers (32) in 19 parties: Carl Bengston, Brad Boyd, Jane Carpenter, Mr. and Mrs. Walter Dau, Dale Dickinson, Joel Ellefson, Elton Fawks, Margaret Flesher, Mr. and Mrs. Jake Frink, Jim Harper, Mary and Tom Hawkinson, Dick Hazel, Mark Henderson, Mr. and Mrs. Gene Hollen, Fred Lorenzen, Dorothy Marquis, Beth and Rod Mast, Kim Norris, Mr. and Mrs. Peter C. Petersen (compiler), April and Ernie Sadler, Mr. and Mrs. Leonard Swanson, Ralph Troll, Bill Wallower and Walter Zuurdeeg (Quad-City Audubon Society).

Details of unusual observations: Golden Eagle, an immature, seen by Elton Fawks and Jim Harper at Hampton, Ill. at 100 yards, 7X binoculars, light base of tail above and below, dark terminal band, feathered tarsus, present since 12-9. Glaucous Gull near Hampton, Ill., seen in flight with Herring Gulls, at 50 yds. 7 X binoculars, very pale mantle, seen by Elton Fawks.

Other species seen during census period: Saw-whet Owl, Yellow-bellied Sapsucker, Meadowlark (sp.).

Comments: Lack of snow cover made locating grassland birds almost impossible.

7. DECORAH (A 15-mile diameter circle centered on NE corner S24, T99N, R8W.) Dec. 17: 5 a.m. to 5 p.m. Temp. 35 to 43; wind: 10-25 mph from S. Overcast, fog, intermittent light rain all day; 0-3 in. snow cover; streams partly open.

Observers (15) in 4 parties: Florence Albright, Francis Arness, Alan Branham, Ruth Fretheim, Oivind Hovde, Darwin Koenig (compiler), Pat Koenig, Germaine Kuhn, Ron Lecander, Marlene Michel, Mr. and Mrs. Dale Nimrod, Mr. and Mrs. Arnold Rohm and Joe Schaeffebuel.

Details of unusual observations: Great Blue Heron -- Present along the same stretch of creek all fall. On count day, 4 observers watched it for 5 minutes, on the ground and in flight, at distances as close as 100 yards. Long legs and neck; great size; long, straight bill; blue-gray body coloration; whitish head with black feathers running from back of eyes to back of head; and, in flight, the neck folded back on shoulders were observed.

Golden Eagle -- Immature, 4 observers watched it in flight for 3 minutes from as close as 250 yards. The white patches at the base of the primaries (both on upper and under surface of wings); solid dark wing linings and body; large size (compared to two Red-tailed Hawks flying in the area at the same time); and white tail with dark terminal band were observed.

Other species seen during census period: Red-winged Blackbird, Evening Grosbeak, Red Crossbill.

[illegible]

[illegible]

8. DES MOINES (A 15 mile circle centered on 63 St. and University to include Maffit Reservoir Walnut Woods Easter Lake and City Parks.) Dec. 17: 7:30 a.m. to 4:15 p.m. Temp. 38 to 42; wind: 7 mph from SSE. Cloudy, light rain and mist, no snow cover.

Observers (11) in 4 parties: Gene Armstrong, Ruth Binsfield, Bill Boller (compiler), Margaret Brooke, Ruth Buckles, Fred Crane, Gladys Haskell, Mr. and Mrs. Dick Mooney, Mary Peck, Sylvan Runkle, Virginia Van Liew and Lurene Wartens.

Details of unusual observations: N. Mockingbird and Brown Thrasher at feeder since fall.

Other species seen during census period: Mourning Dove, Rufous-sided Towhee, White-throated Sparrow.

9. DeSOTO NATIONAL WILDLIFE REFUGE (15 mile diameter circle centered on refuge headquarters) Dec. 22: 7 a.m. to 5 p.m. Temp. 16 to 38; wind: 5-10 mph from NW. Partly cloudy to overcast, ground bare, some open water.

Observers (17) in 6 parties: K. C. Batchelder, Tim Blount, Tanya Bray, Hal Chase, Thomas Hoffman, George Gage, Ruth Gochenour, Ruth Green, Janet Greer, Ed McCrea (compiler), Evie McCrea, Marion Meier, Steve Moorman, Cathy Nelson, Margaret Perry, Ross Silcock and Barb Wilson.

Details of unusual observations: see comments by Silcock at beginning of this article. ed.

10. DUBUQUE (15 mile diameter circle with center at Center Grove cemetery including Linwood, John Deere, Durango, Industrial Island, Massey, Peosta, East Dubuque, Sinopee) Dec. 26: 7 a.m. to 4:45 p.m. Temp. -2 to 8; wind: 5 mph from WNW. Clear, 4' old snow, river partly open, wild food crop fair.

Observers (28) in 9 parties: plus 2 at feeders. Sharon Beebe, Douglas Cox, George Crossley (compiler), Frank and Robert Donner, John Edmonds, Peter Erzen, Adele, John and Mark Feller, Paul Heathcote, David Heer, Harry Herold, William Herrmann, Joan and Howard R. Highley, John Miller, Ronald Neu, David, James and Laurel Rooks, Ronald Sarson, Beatrice and Francis Schon, John Stampe, Dan Stocker, Neil Trevethan, Robert Walton, Jan and Robert Williams.

Details of unusual observations: All 20 eagles were reported as adults.

Other species seen during census period: Pied-billed Grebe, Bufflehead, Ruddy Duck, American Coot, and Herring Gull.

Comments: Weather had moderated for a week then froze the water again driving out some water birds; record year from finches. White-winged Crossbills had also been seen. Another record number of observers and species for Dubuque.

11. IOWA CITY (Center intersection U.S. 218 and F28, S to Iowa City, N.W. to Swisher, W to Kent Park, including Coralville Reservoir and L. Macbride.) Dec. 17: 6 a.m. to 5 p.m. Temp. 37 to 46; wind: 10-25 mph from SE-S. Overcast and light to moderate rain all day, snow cover 0-2 in. (except for drifts).

Observers (31) in 7 parties: B. & R. DeCoster, M. Delle, E. & M. Folk, G. & S. Garton, E. & R. Graber, N. Halmi (compiler), J. Hargrove, D. Hartle, J. Hines, R. Hollis, T. Kent, B. & C. Knights, B. Knowles, H. LaRue, R. Mast, D. Mohler, P. Nadeau, C. & M. Newlon, K. Norris, P. Petersen, E. & S. Sadler, C. & T. Shires and T. Staudt.

Details of unusual observations: Snow Goose flying over reservoir, new to count.

Other species seen during census period: Common Grackle.

Comments: Tape used for Screech Owl. Weather conditions very unfavorable. Com. Flicker and Red-headed Woodpecker counts low, Long-eared Owls unusually

numerous.

12. JAMAICA (15 mile diameter circle centered 1½ miles West and 4 miles South of Jamaica, Iowa, covering northeast corner of Guthrie county and portions of Greene and Dallas counties, and includes Springbrook State Park, Lakin Slough and Bays Branch Wildlife Conservation areas, Lake Panorama, Long Pond and Raccoon River) Jan. 1; 6 a.m. to 6 p.m. Temp. 2 to 8 above; wind: 15 mph from NW. 8 inch snowfall previous day, rivers and lakes frozen over except open stream through Springbrook State Park, and area below Bays Branch and the dam on Lake Panorama.

Observers (4) in 1 party: Dr. Wm. A. Seidler, Marilyn Burns, Kim Burns and Gene Burns (compiler).

Other species seen during census period: Northern Harrier, American Kestrel, Common Snipe, Belted Kingfisher, Tufted Titmouse, Loggerhead Shrike, Western Meadowlark, Brown-headed Cowbird, Purple Finch, Harris' Sparrow and Song Sparrow.

Comments: The 8 inch snowfall and high winds the previous day and during the count day morning drifted all roads in the census area shut with the exception of the two main highways which had been opened by snow plows. The count was exceptionally low because of this and because other observers unable to attend because of these weather conditions.

13. KEOSAUQUA, formerly submitted as Bentonsport (15-mile diameter circle centered at Keosauqua, & including Lacey-Keosauqua State Park, county roads, railroad right-of-way, Des Moines and Fox River bottoms & bluffs) Dec. 27: 7:30 a.m. to 5 p.m. Temp. 4 to 15; wind: 5-10 mph from WNW. Sunny and very cold; ground mostly snow-covered, with drifts in places. Des Moines River partly open.

Observers (3) in 1 party: Kathy Fisher (compiler), Oneita Fisher, Mike Zahs, plus Dick Fisher at feeder.

Other species seen during census period: Bald Eagle, Bobwhite, Turkey, Great Horned Owl, Horned Lark, Brown Creeper, N. Mockingbird, Common Grackle and Evening Grosbeak (last three at our feeder).

Comments: Exceptionally good day for hawks, but little activity otherwise except around brush piles near fields of standing corn. All but 2 Mourning Doves were in one flock, feeding with cattle along a sheltered creek bed.

14. LAMONI (15 mile diameter circle centered at junction of I-35 and U.S. 69 east of Lamoni, including county roads, pasture and farmland) Dec. 26: 8 a.m. to 5 p.m. Temp. 4 to 18; wind: 10 mph from NW. Clear to partly cloudy, scattered light snow cover, lakes and ponds frozen, streams 95 percent frozen.

Observers (11) in 5 parties: Mrs. Dean Ballantyne, Leslie and Willie Barnett, Mrs. W. C. DeLong, Bill, David and J. Donald Gillaspey (compiler), Dan Long, Lee Searles, Mr. and Mrs. Ralph Silver.

Details of unusual observations: Red-headed Woodpeckers are very scarce this winter. Horned Lark and pheasant more abundant than count figures show.

Other species seen during census period: Mourning Dove and Short-eared Owl.

15. LOST NATION, formerly Wheatland, center moved (A 15 mile diameter circle center on a point approximately 1 mile south of Lost Nation, Iowa, including a stretch of the Wapsipinicon River.) Dec. 27: 5:30 a.m. to 5 p.m. Temp. -4 to 5; wind: 4-8 mph from N-NW. Clear skies, scattered snow cover.

Observers (10) in 5 parties: Bob Bryant, Esther C. Copp, E. Lee and Lindsey Lee, Pete Petersen, Janette Ruprecht, Mr. and Mrs. Leroy Schutt, Charlie and June Wentworth.

Details of unusual observations: Sighting of one N. Goshawk on edge of pine forest.

Other species seen during census period: Am. Kestrel, Red-winged Blackbird and Evening Grosbeak.

16. MARBLE ROCK (Same as previous years, Ackley Creek, Winnebago Scout Camp, the sewage treatment facilities, open water on and springs feeding into the Shell Rock River, not the whole 15 mile area) Dec. 27; 7 a.m. to 5 p.m. Temp. -5 to 5; wind: 5-10 mph from NW. Clear, ditches nad wooded areas snow covered, fields clear of snow.

Observers (2) in 1 party: Pearl Knoop and Tom Staudt (compiler).

Details of unusual observations: Short-eared Owl and Harris' Sparrows were new to the Marble Rock count. Both were seen in the same cedar woods in the afternoon. Immature Harris' were identified by size, blotched and streaked breast and head shape.

Other species seen during census period: Horned Lark, Evening Grosbeak and Common Redpoll.

Comments: Screech Owl tapes were used with success. Pheasant count was pleasingly high. The lack of Red-headed Woodpeckers was expected.

17. MARSHALLTOWN (15 mile diameter circle centered on F27 one mile east of Highway 14 and including Union Grove Lake, same as previous years.) Dec. 17; 8 a.m. to 4 p.m. Temp. 42 to 36; wind: 5-20 mph from S-SE. Intermittent rain and mist, wind switching to SW in afternoon. Poor visibility, snow only in drifts and ditches. Iowa River 50 percent open upstream from Marshalltown, 100 percent open downstream, Lake completey frozen over.

Observers (22) in 5 parties: plus 5 at feeders. George Crowther, Mr. and Mrs. Norman Eige, Frieda Ellerbeck, Mr. and Mrs. Kenneth Graham, Wendell Graham, Orville Grimes, Mr. and Mrs. Carl Hollingsworth, Marlys Huff, Mr. and Mrs. John King, Mr. and Mrs. Curt Kreiger (compiler), Carl Kurtz, Carol McMillan, Lester Olsen, Mr. and Mrs. James Plambeck, Mr. and Mrs. Les Ralston, Mr. and Mrs. Ed Savage, Bob Thomas, Jim Wignall and Ruth Zorn.

Other species seen during census period: Horned Lark, Brown Creeper, Red-winged Blackbird, Brown-headed Cowbird, Evening Grosbeak, White-throated Sparrow, Song Sparrow, and Snow Bunting.

18. MASON CITY (15-mile diamter circle centered on airport.) Dec. 26; 8 a.m. to 4 p.m. Temp. 4 to 7; wind: 18 mph from NW. Only open water was the Winnebago River in East Park.

Observers (18) in 5 parties: Ed and Millie Conway, Virgil Eness, Thelma Fromm, Arvid, Olie, and Mae Holman, Beth McBride, Richard, Jack, Curt and Genevieve Nelson, Art and Florence Wagner, Jim and Jan Walters, Paul Willis Phyllis Willis.

Details of unusual observations: Red-shafted Flicker seen northwest of Mason City. Rarely seen in this area.

Other species seen during census period: Snow Bunting. (See in large flocks before and after the count, but not on count day.)

Comments: The imm. Red-tailed Hawk was seen in Mason City residential area being pursued by crows. Many crows were seen in town. Arctic Three-toed Woodpecker seen in Mason City Jan. 7.

19. MUSCATINE (15 mile diameter circle centered on Lock and Dam 16, same as previous years.) Dec. 22; 6 a.m. to 5 p.m.; Temp. 8 to 36; wind: 2-15 mph from SW. Party cloudy, ground covered by about 5" drifted snow, river 50 percent ice covered.

Observers (7) in 3 parties: Carol and Mike Newlon, Mary Lou Petersen, Peter C. Petersen (compiler), April and Ernie Sadler.

Details of unusual observatons: Lincoln's Sparrow seen at a range of 10-15'

with Song Sparrows, fine streaking, buffy breast noted by C.N.

Comments: New record for total Bald Eagles seen in a 17 year series of counts.

20. NORTH LINN (Open fields 55 percent, open woods 40 percent, river and marsh 5 percent. Center N.E. corner Sec. 7, Maine Township) Dec. 28; 5:45 a.m. to 5 p.m. Temp. 29 to 28; wind: 10-15 mph from W. Mostly clear both A.M. and P.M. - 2 to 8" snow-water partly open.

Observers (12) in 6 parties: Norman Byers, Rob Bradley, Duane Carr, Floy Erickson, Vi Groth, Beryl Layton, Lucille Liljedahl, Brian Nelson, Weir Nelson (compiler), Roberta Oppendahl, Bobbie Shaffer and Fred Thompson.

Other species seen during census period: Red-winged Blackbird.

Comments: This area holds a bright future as a C.B.C. location. We are learning many new areas to search out.

21. OAKVILLE (15 mile diameter circle, centered 4 mi. E. New Boston, Ill., same as previous years) Dec. 31; 6 a.m. to 4:30 p.m. Temp. 28 to 30; wind: 8-15 mph from E. Overcast, freezing rain early A.M., snow late P.M. Ground covered by 5" of old, drifted snow, rivers 80 percent ice covered.

Observers (7) in 4 parties: Bill Bertrand, Kay Carlson, Don Graves, Peter C. Petersen (compiler), April, Sean and Ernie Sadler.

Comments: Visibility very poor, especially along Mississippi.

22. OMAHA (A 15-mile diameter circle centered on Offutt Air Force Base Lake and including Lake Manawa, Ia., Fontenelle Forest, Plattsmouth Waterfowl Refuge.) Dec. 27; 4:45 a.m. to 4:45 p.m. Temp. 33 to 37; wind: 15-20 mph from NW. 15 inches precipitation as snow flurries and rain. No snow cover. Rivers open and some melting around edges of streams and ponds due to warm temperatures in early part of week.

Observers (35) in 11 parties:

Details of unusual observations: Great Blue Heron seen by Patty Burchard and Melba Wigg. First time reported on Christmas Count. Large blue-gray bird seen at less than 200 feet from us as we started to cross a bridge spanning a small stream and marshy area. Flew away from us and landed in a tree; again able to view the bird with 7 x 35 glasses at a distance of 500 feet.

23. OSKALOOSA (15 mile diameter circle centered on the Mahaska county courthouse, including Lake Keomah State Park and South Skunk River). Dec. 23; 7:30 a.m. to 4:30 p.m. Temp. 24 to 34; wind: 5 mph from SW. Sunny, pleasant day, ground mostly snow covered with many big drifts, much open water where moving, otherwise frozen.

Observers (2) in 1 party: Irene and Keith Layton (compilers), plus 6 at feeders.

24. OTTUMWA (15 mile diameter circle, centered on north end of Jefferson St. Viaduct in downtown Ottumwa, including Ottumwa Airport, northwest of city and YMCA Camp Arrowhead and Forest Lake Baptist Camp southeast of city, and 15 miles of Des Moines River valley bisecting count area). Dec. 31; 7:30 a.m. to 4:30 p.m. Temp. ? to 27; wind: 0-5 mph from NW. Foggy and murky throughout day with snow beginning about 3 p.m. Spotty snow and ice cover prior to afternoon snow. Des Moines River open with some small ice floes.

Observers (21) in 5 parties: Charles and Darleen Ayres (compilers), Nelson and Randy Hoskins, Blossom Hallberg, Joan Schooley, Madeline Wymore, Gary Wymore, Dorothy Byers, Bernard and Florence Fulton, Elaine and Donald G. Johnson, Lee Pulis, Becky, Tom, and Breck Johnson, Joe Moriarty, Sam Harper, all of Ottumwa; Marge and Bill Heusinkveld of Centerville. Fedder counts were made by Jean and Dick McGowan, Ruby Gilbert, Lois and Dale Snyder, Marge and Harold Haller, Chuck Rinkel, Pearle Walker.

25. PRINCETON (15 mile diameter circle, centered at Folletts, same as previous years.) Dec. 26; 5:45 a.m. to 5 p.m. Temp. 2 to 12; wind: 8-15 mph from NW. Clear, ground partly covered by up to 5" old, drifted snow, river 90 percent ice covered.

Observers (10) in 4 parties: Elton Fawks, Margaret Flesher, Jim Haper, Rod Mast, Kim Norris, Mary Lou Petersen, Peter C. Petersen (compiler), April and Ernie Sadler, and Paul Van Neuwenhuyse.

Details of unusual observations: Golden Eagle seen at Quad-Cities Nuclear Station, same plumage as bird seen Dec. 18 at Davenport, perhaps the same bird -- Fawks and Harper.

Comments: New record number of Bald Eagles, 162 compared to previous record of 107, 9th year for count. Great care taken to insure accuracy of the eagle count -- river area covered in 90 minutes.

26. RATHBURN (A 15-mile diameter circle centering 1 mile south of the mid-section of Lake Rathbun and including the dam area and the wildlife refuge.) Dec. 17; 7 a.m. to 5 p.m. Temp. 36 to 40; wind: 5-10 mph from SW. Drizzle and increasing rain as the day progressed. Lake mostly ice covered.

Observers (20) in 7 parties: Charles and Darleen Ayres, Jack Coffey, Craig and Enid Coulter, Ann Curran, Bill and Marj Heusinkveld, Nelson and Randy Hoskins, Tom Johnson, Irene and Keith Layton, Kay Malmberg, Joe and Mary Murphy, Bondine Rissler, Charlotte Scott (compiler) and Gary and Madeline Wymore.

Details of unusual observations: As in other years, we asked Jack Coffey to make an estimate for us on ducks and geese. The aerial count on the 12th by the State Biologist had been 75,000, so Jack's count shouldn't be an exaggeration. However there are those in our group who feel that since his count is an estimate it shouldn't be included with the rest of ours.

Other species seen during census period: Short-eared Owls moved into the area right after the count and have been seen regularly since.

Comments: We had had a report of a Saw-whet Owl in a cedar-covered pasture and while searching for it, the Long-eared Owl was discovered. It was seen by several in the group.

27. RED ROCK RESERVOIR (15 mile diameter circle centered on the south end of the mile long bridge (Hwy 14) - including half of Red Rock Refuge, all of Red Rock lake and Roberts creek and the tailwater area.) Dec. 18; 7:15 a.m. to 4:30 p.m. Temp. 33 to 39; wind: 12 mph from SE. Mostly overcast with sparse snow cover.

Observers (27) in 6 parties: with 4 at feeders. Eugene and Eloise Armstrong, Bob and Virginia Bell, Gladys Black, John Bowles, David Bowles, Gene and Marilyn Burns, Bernie Cook, Herb and Edith Dorow, Paul and Mary Felsing, Keith and Irene Layton, Andy Lyons, Mr. and Mr. Dean Mosman, Mike Mosman, Loreen Stegaman, Jim Sinclair, Jay Stravers, Jon Stravers (compiler), Lenord Thompson, Robert Thornberg and Nola Vander Strek.

28. SHENANDOAH (A 15-mile diameter circle centered on Farragut to include Riverton and adjacent land and water.) Dec. 17; 7 a.m. to 5 p.m. Temp. 33 to 38; wind: 15-20 mph from NW. Overcast, intermittent rain in the morning. No snow cover. Fresh water partly open and wild feed crop fair.

Observers (9) in 5 parties: plus 2 at feeders. Rebecca Bernthal, Barbara Cunningham, Clifford Moles, Mr. and Mrs. Wayne Phipps, Ross Silcock, Mrs. Eldon Spears, Mrs. Edward Vaughn and Mrs. Donald Walter (compiler).

Details of unusual observations: Swan data, see longer note by Silcock in General Notes. Brewer's Blackbird - with freckles, 4 all male - pure black plumage

iridescence noted, blackbird bill, light eye. Different call from Rusty - not squeaky.

Other species seen during census period: Am. Green-winged Teal, Ring-necked Duck, Killdeer, Barred Owl, Evening Grosbeak and Purple Finch.

29. SIOUX CITY (Same as previous year. 15 mile diameter circle centered on Sioux City Auditorium) Dec. 17; 8 a.m. to 5 p.m. Temp. 35 to 36; wind: 20-30 mph from NW. Very cloudy, poor light, some snow and rain.

Observers (13) in 4 parties: Carolyn and Larry Benne, Steve DeKoster, Dawn and Tom DeKoster, Larry Farmer, Mary Kay Kottmann, Phyllis and Robert Nickolson (compiler), Todd Oetken, Marc Wachter and Morgan Webb.

Comments: In general, very poor day for birding.

30. WESTFIELD (15 mile diameter circle centered on section 16, Sioux Township, Plymouth County and including Big Sioux River bottoms.) Jan. 2; 7 a.m. to 5:30 p.m. Temp. 10 to 18; wind: 3-12 mph from WNW. Clear. 3-11 inches snow cover, very little bare ground, infrequent patches of open water on Big Sioux.

Observers (7) in 3 parties: Carolyn and Lawrence Benne, Larry Farmer (compiler), Brett Oetken, Dean, Pat and Paul Williams.

Details of unusual observations: The New Year's Eve snowstorm drove large flocks of Horned Larks to the snowless roads which facilitated counting.

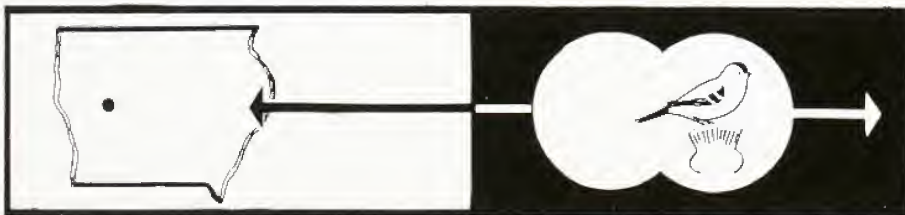
Comments: Because the greater percentage of the flocks of Horned Larks, Lapland Longspurs and Snow Buntings was counted as they were flying and distinguished only as Horned Larks and Snow Buntings, the tabulation of Longspurs does not reflect an accurate count of this species.

31. YELLOW RIVER FOREST (A 15-mile diameter circle centered on NE corner S8, T96N, R3W) Dec. 31; 6 a.m. to 5 p.m. Temp. 14-25; wind: 10-20 mph from N. Moderate snow all day; water partly open; 6-12 inch snow cover.

Observers (20) in 7 parties: Francis Arness, Mr. and Mrs. Gary Bottorff, Alan Branham, Larry Farmer, Mr. and Mrs. David Howell, Gretchen Jurs, Darwin Koenig (compiler), Pat and Paul Koenig, Germaine Kuhn, Ron Lecander, Marlene Michel, Andrew and Dale Nimrod, Martha Perrigard, Mr. and Mrs. Arnold Rohm and Joe Schaufenbuel.

Details of unusual observations: Pine Grosbeak -- 5 observers watched them for 5 minutes from 20 feet while they fed in an ash tree. Robin size; two white wingbars; rose red head, breast, rump, and back of males; gray with olive green head and rump of females were observed.

White-crowned Sparrow -- 4 observers watched it for 3 minutes from 50 feet. Black and white striped head; plain gray breast and throat; and lack of yellow spot between eye and bill were noted.



Birding Areas of Iowa - West Central Iowa

GENE BURNS
JAMAICA, IOWA

Two days and 874 miles later, my wife and I had covered 41 birding areas in six Iowa counties. We were only able to account for 64 species, but due to high

winds, rain, extremely hot weather, and the 4th of July weekend and there being many people and campers nearly everywhere we stopped, undoubtedly had a bearing on this as we really expected to account for 70 to 80 species. Also we did very little walking and spent a lot of time driving to each area and this also would reduce our final total. Bits of other information which may be of interest are: We passed by 34 ponds all supporting the area birdlife, 39 running streams and 6 dry stream beds. One of the oddities on our trip the first day was that we drove 219 miles before seeing our first Common Crow and then we only saw 4. On the second day we drove 323 miles before seeing our first Common Crow and this time there was only one. I had talked with a Conservation Officer last year and he said he felt the Crow population would be down considerably this year and he was certainly correct. The "Blue-listed" species seen were as follows: American Kestrel 2, Yellow-billed Cuckoo 4, Common Nighthawk 1, Red-headed Woodpecker 55, Purple Martin 31, Loggerhead Shrike 2, Grasshopper Sparrow 2, and Vesper Sparrow 3. The entire trip and time spent was worth it because of the 14 Western Kingbirds and the 12 Blue Grosbeaks which we observed. Anyone wishing to observe these 2 species should drive to Western Monona and Harrison counties where they can be observed by simply driving the country roads and look for them on the line wires.

The birding areas that we visited are listed below. Of course there are probably several more good areas in each of these 6 counties, but here are the ones we drove to and some of the highlights and conditions about each one with some of the species we observed. A variety of species were seen at each area in addition to the ones mentioned.

Shelby County

(1) **Elk Horn Creek Recreation Area** -- Located 2½ miles southwest of Elk Horn, 60 acres. All facilities including a stream. We saw Yellow-billed Cuckoo and Vesper Sparrow here.

(2) **Prairie Rose State Park** -- About 7 miles southeast of Harlan, it contains over 600 acres including a 218 acre lake. All facilities, very nice birding area, Mallards, Wood Ducks with young and Black Terns observed.

(3) **Little George Park** One-half mile south of Harlan, 6 acres, including pond.

(4) **Schimerowski Recreation Area** -- Just east of Earling with camping, toilets, and picnicking. Black-billed Cuckoo seen here.

(5) **Menteno Park** -- Eight miles northwest of Defiance, 75 acres, all facilities including a lake. A good birding area with Orchard Oriole, Grasshopper Sparrow, Swallows, American Kestrel and Warbling Vireo seen.

Crawford County

(1) **Nelson Park** -- Five miles northwest of Dow City, 165 acres, all facilities including a lake. Mallard, Coot, Eastern Pewee and many Horned Larks observed, a good area.

(2) **Sunset Park** -- West edge of Denison, 21 acres including 5 gravel pits with all facilities except camping.

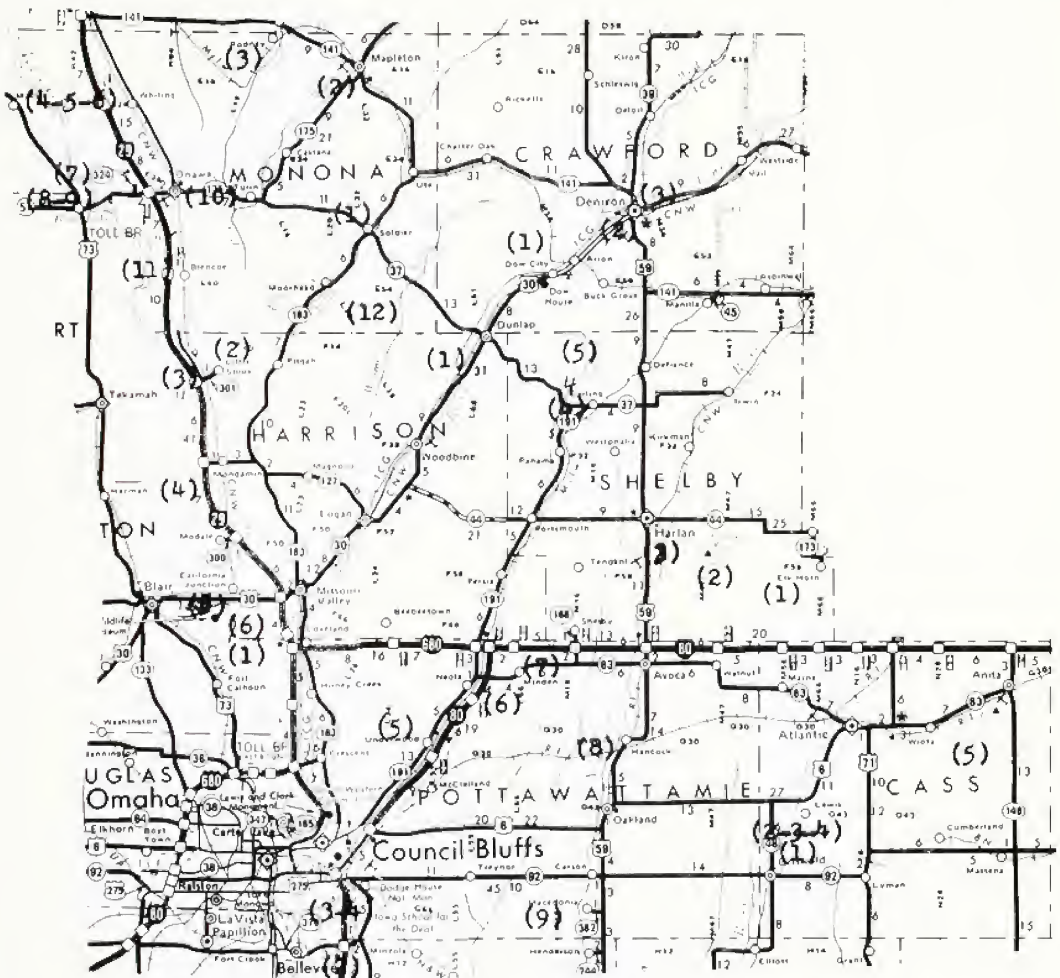
(3) **Yellow Smoke Park** -- East edge of Denison, 310 acres and is under development with no facilities as yet. Should be a good birding area in time to come. We saw 4 Red-tailed Hawks, and many Red-headed Woodpeckers.

Monona County

(1) **Oldham Recreation Area** -- One and one-half miles northwest of Soldier, 13 acres, all facilities including a pond. We observed several Common Bobwhites.

(2) **Whiting Woods** -- Four miles southwest of Mapleton, 80 acres, all facilities except camping and electricity. It has a lake and is a good birding area.

(3) **Pawnee Recreation Area** -- West of Rodney, 9 acres, no facilities. We found Loggerhead Shrike and Blue Grosbeak.



(4) Interstate 29 Wildlife Area -- Located 2½ miles west of Whiting, 253 acres, no facilities. A Orchard Oriole was seen.

(5) Badger Lake -- Situated 3 miles west of Whiting, 444 acres, no facilities but a good marsh area.

(6) Monona Bend Scenic Drive -- Six miles west of Whiting, 8 acres, no facilities. We saw Western Kingbird and Common Bobwhite.

(7) Lewis and Clark State Park and Blue Lake -- Four miles northwest of Onawa, over 1,000 acres including a large lake with all facilities. Coot, Mallards and Killdeer seen, a good spot for migrating geese in spring.

(8) Onawa Materials Yard -- Located 5½ miles west of Onawa, 3 acres, no facilities. Blue Grosbeak seen here.

(9) Decatur Bend Access -- Four miles west and 1 mile south of Onawa, 6 acres, all facilities except electricity. We found Blue Grosbeak.

Monona Arboretum -- East edge of Onawa on highway 175, water, toilets, and picnicking.

11. Huff-Warner Access -- Situated 2½ miles west of Blencoe, 5 acres, all facilities. Blue Grosbeak seen here also.

12. **Preparation Canyon State Park** -- Five miles southwest of Moorhead. Acreage and facilities unavailable, but it is a good sized park with an excellent overlook. We were there at sunset and it is a beautiful sight to behold and the birding is very good.

Harrison County

(1) **Schaben Park** -- Five miles southwest of Dunlap, 77 acres including a lake, including all facilities except electricity, this is a good birding area.

(2) **Sioux Dam Fishing Access and Murray Hill Overlook** -- Take a county road 3 miles north of Little Sioux, containing 10 acres, with all facilities, including a stream. Turkey Vulture, Blue Grosbeak and Western Kingbird seen here.

(3) **Little Sioux Delta** -- One mile west of Little Sioux, 35 acres with stream, picnicking.

(4) **Remington Boat Launch** -- Located 5 miles southwest of Mondamin, one acre, no facilities. We found Blue Grosbeak, Indigo Bunting, swallows and Red-tailed Hawk here.

(5) **DeSoto National Wildlife Refuge** -- Six miles west of Missouri Valley on highway 30. Acreage unavailable but it is a very large refuge. All facilities including a lake and river. An excellent birding area, particularly during waterfowl migration. A list of the birds can be obtained at refuge hqtrs.

(6) **Noble Lake** -- Seven miles southwest of Missouri Valley, 289 acres, all facilities, a good birding area. Western Kingbird, Common Bobwhite, and Green Heron found here.

Pottawattamie County

(1) **Wilson Island** -- Eight miles northwest of Honeycreek, 500 acres. We found Western Kingbird, Blue Grosbeak, Common Bobwhite, and Yellow-billed Cuckoo here, a good birding area.

(2) **Interstate 29 Marsh** -- Located at Council Bluffs, 14 acres, no facilities.

(3) **Lake Manawa State Park** -- Southeast edge of Council Bluffs, all facilities. Particularly good during migration for loons, grebes, diving ducks and gulls.

(4) **Longs Landing** -- One mile south of Lake Manawa, 24 acres, all facilities and a stream.

(5) **Underwood Cemetery Area** -- One mile southwest of Underwood. We found a Loggerhead Shrike.

(6) **Arrowhead Park** -- Located 1½ miles southeast of Neola, 147 acres, all facilities with a stream and lake. An excellent birding area with great habitat. We saw Yellow Warbler and Orchard Oriole here.

(7) **Minden** -- Keg creek area around Minden.

(8) **Botna Bend Park** -- East edge of Hancock, 119 acres, all facilities. A good birding area.

(9) **Olde Town Park** -- One mile west of Macedonia. 8 acres, all facilities except electricity. A good birding area with Yellow-billed Cuckoo and a nice stream.

Cass County

(1) **Cocklin Fish Farm** -- One mile north of Griswold, acreage unavailable, all facilities and a horseshoe lake. A fine birding area.

(2) **Cold Springs State Park** -- One mile south of Lewis, 104 acres, all facilities plus a lake. A good birding area.

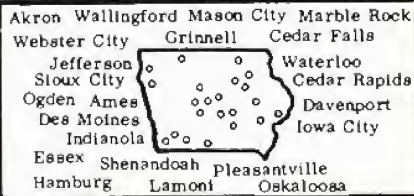
(3) **Iranistan Rock Quarry** -- Two miles west of Lewis, 34 acres, no facilities.

(4) **Turkey Creek Area** -- Two miles west of Lewis, 34 acres, no facilities.

(4) **Turkey Creek Area** -- Two miles northeast of Lewis, 57 acres, no facilities. Has a stream and good timber.

(5) **Lake Anita State Park** -- One mile south of Anita, acreage unavailable, but is a large park with a big lake. Contains fine habitat. We found Orchard Oriole, Eastern Bluebird, and Eastern Meadowlark.

FIELD REPORTS



Winter 1977-78

The species marked with * are on the National Audubon Blue List (Am. Birds 30: 1031, 1976), the Iowa Blue List (I.B.L. 45:95, 1975) and/or on Dean Roosa's list of endangered, threatened or declining species in Iowa (I.B.L. 46:40, 1976).

General Comments. Because of the early deadline, the winter has to be described while it is far from over. December temperatures were a little below average, and snowfall slightly above. January was in the mold of last year's, although not quite so extreme. Temperatures averaged 12 degrees F below normal, and snowfall was less than in a typical January, but more disruptive than figures in inches would indicate, because it was, in many places, whipped into deep drifts by the repeated blasts from the Arctic Circle. What has passed of February thus far represents no departure from the January pattern. It is gratifying that numerous reports were received from N.W. Iowa, usually neglected, and more than the standard number from southern counties. On the other hand, some areas generally well covered failed to report by February 15, a deadline I had to adhere to strictly because of the logistics of preparation and publication of this summary. Late arrival of the December issue and fickleness of the postal service may have caught faithful contributors in a squeeze. My apologies to them, and my assurances that observations of regional interest will be passed on to *Am. Birds* even if they reached me late. This report should be read in conjunction with Dr. W. Ross Silcock's excellent summary of the Christmas Bird Counts, since I shall try to avoid all unnecessary duplication. The leitmotif of the season was, as anticipated, an influx of some northern finch species, with Pine Grosbeak, Common Redpoll, Lapland Longspur and Snow Bunting in the limelight, as well as Hoary Redpoll added to the Iowa list.

Abbreviations used. CBC - Christmas Bird Count; CoR - Coralville Reservoir and Refuge; HHP - Hickory Hill Park, Iowa City; YRF - Yellow River Forest.

Grebes through Ducks. A Pied-billed Grebe below the Coralville Dam was seen on December 24 and February 7 (NiH). One December 16, a Great Blue Heron was observed near I-29 (IG); on January 29, another occurred below the new Saylorville Dam (TK, TSh, NiH). An imm. Mute Swan was seen flying near Bettendorf on December 3-4 (PP). A longer note discusses the imm. swan sp., possibly a Trumpeter, encountered on December 18 on the Shenandoah CBC (RS). Flocks of 20-30 Canada Geese in the Davenport area in December and into early January could have been late migrants (PP). A large flock (est. 2-400) flying over Iowa City on January 13 (RD) is harder to explain. Snow Geese were abundant at Riverton (20,000, December 12; still 900, January 7, RS). The singleton at the CoR which added a new species to the Iowa City CBC list was still around on December 18 (RD). As usual, Mallards were the most common wintering ducks, with small numbers occurring all over the state. At Riverton, there were 93,000 on December 12; several hundred stayed near the Saylorville Dam (DM); about 250 on the Mississippi at Davenport were average (PP). Black Ducks were seen on the Mississippi in the N. E. (15 at the Lansing power plant January 2-22, JS) and at

Davenport (6-8, PP). A Gadwall was at Riverton on December 12 (RP), a Common Pintail on the Cherokee River on December 18 (DB), and an American Wigeon at Riverton (December 12, RP). In early December, a couple of Wood Ducks were encountered in Dubuque (GC) and one near Davenport (PP). A Redhead was reported from Riverton (December 10, RS). Single male Ring-necked Ducks were seen at Riverton, January 7 (RS) and below the Coralville Dam January 21-22 (NiH). The count of Common Goldeneyes (75-100) and Common Mergansers on the Mississippi in the Davenport area was average (PP).

Raptors through Turkeys. A Northern Goshawk was briefly seen (January 22) on a farm near Oxford, Johnson Co., where one has resided during some recent winters (EF). There were scattered reports of * Sharp-shinned Hawks: one near Camanche, January 22 (PP), one in a pine grove west of Iowa City, January 14 and February 4 (MN et al., TK, TSh), singles December 28-29 in Winneshiek and Allamakee Counties (DK), and one, very conveniently, under my window on January 10. *Cooper's Hawks were just about as common, all singles: January 3 at Hamburg (IG); at Gene Armstrong's feeder (fide WB); S. W. of New Albin, December 24 (JS); an adult (January 31) and an imm. (February 8) near Stephens Forest, Lucas Co. (G-LC). The consensus is that Red-tailed Hawks were present in good numbers. * Red-shouldered Hawks were also found: one on December 19 on the Alleman CBC was the first seen in that area by Mosman; a single bird may have been responsible for several sightings on CBC and later in January along the Mississippi near Camanche (PP). A *Swainson's Hawk was reported from Hamburg, January 18 (IG). The problems of winter sightings of this species are discussed in Silcock's CBC summary. There is general agreement that Rough-legged Hawks were present in above-average numbers, as far south as the Shenandoah (RP) - Seymour (ChS) - Burlington (C-JF) line. Two adult Golden Eagles were reported from Allamakee Co., January 22 (JSc) and 29 (DK). The former puzzled Schaufenbuel by feeding on a Long-eared Owl (prey? carrion?). Bald Eagles moved to open water as the rivers and lakes froze over: contraction of suitable feeding areas produced locally spectacular numbers, like the 64 adults, 85 immatures counted at Princeton-Camanche on December 3 (PP) (see also the CBCs). Few *Northern Harriers were seen after the CBCs: they stayed in the Elkhart area (DM); at Sidney, January 10, Hamburg, January 20 (IG) and the CoR, January 2, singles were seen. A *Merlin seen on February 7 4 miles north of Calamus (Bob Bryant fide PP) awaits documentation. Reports of wintering *American Kestrels have come from all over the state, and indicate that their numbers in Iowa were at least average. Little was said about Common Bobwhites (none outside the CBCs, PP), which could be bad news; among the other gallinaceous birds, Ring-necked Pheasants seem to be doing well, even in the N.W., where they are still recovering from the decimation of 1975, and the numbers of Gray Partridges in the Cherokee area are increasing every year (DB). Four Wild Turkeys reported from the New Albin area in the N.E. (December 24, DK, JS) are overshadowed by the 350-400 in Stephens St. Forest (G-LC), in southern Iowa.

Sandpipers through Owls. A leftover from the fall report must be included: an American Woodcock with icicles hanging from his feathers was seen on November 27 in Seymour (ChS). Single Common Snipes were seen near Alburnett, Linn Co., January 7 (LS) and 15 (MN) (the same bird?), and at the edge of Bettendorf, February 12 (PP). Gulls were few after January 1 on the Mississippi, mostly (90 percent +) Herrings (PP). In view of the cold weather, widespread wintering of Mourning Doves was surprising: flocks of 45 (January 7, Fremont Co. RS) and 24 (February 4, western Johnson Co., TK, NiH, Tsh) were the largest congregations. Common Screech Owls were considered hard to find by several correspondents.

They tend to be reticent in cold weather, but they may have also had problems finding food. One capturing a European Starling in bright sunshine on February 1 (JV) was certainly not behaving typically. In contrast, Great Horned Owls were seen by many, and thought to be numerous. Long-eared Owls were apparently scarce and unevenly distributed (13 of 25 on Iowa CBCs on the Iowa City count): 4 near the CoR, 12-17 and 1-14 (MN), and 2 in the Davenport area (PP). Reports of *Short-eared Owls came from widely scattered localities, without a clear geographic pattern (no more than 4 in any one place). There were these reports of Saw-whet Owls: 2 separate birds in the general area of the CoR, January 21 (LS) and 28 (FT), one on December 24 in Petersen's yard, and one in residence east of Ottumwa (NeH).

Kingfishers through Creepers. There were more reports of wintering Belted Kingfishers than last year: for example, counts average to above in Petersen's territory, and 4 in N. E. counties December 24 - January 15 (JS). If this is a trend, it is welcome, since this species has caused some concern. Pileated Woodpeckers were recorded from unusual places, in addition to known haunts such as the woods south of the Coralville Dam (January 7, TK): 2 in the Amana Woods, January 7 (TK), 1 west of the CoR along the Iowa River (MN et al., January 14), one near Hills, February 10 (RD, MN), and another S.E. of Cedar Rapids (LS). Throughout the state, *Red-headed Woodpeckers were scarce or absent, with the N.E. counties the surprising exception (7 on February 11 in Auburn Township, Fayette Co., JS). A Yellow-bellied Sapsucker was a regular at the feeder after the CBC (PP). Horned Larks were much in evidence whenever snow fell, with 800 counted on a trip from Davenport to Decorah, February 3 (PP). There were comments on the sparsity of American Crows in the east away from the Mississippi (PP) and at Marble Rock (PK). A most urgent note on the need to monitor the *Tufted Titmouse, scarce this winter in northeast Iowa, was sounded (JS). Although Red-breasted Nuthatches invaded parts south of Iowa this winter, more were seen here than in most years: 5 at various Des Moines feeders (WB), one on January 29 at the State Nursery, Ames (H-LZ), 2 regular at the feeder (PP), and one each in Cherokee, December 17 (DB), Cedar Rapids, January 8 (LS) and Marble Rock (PK). Brown Creepers were most numerous in the northeast (JS).

Wrens through Blackbirds. Despite 60 hours of field work in the Crow Creek drainage area (Davenport) since January 1, no Winter Wren was found (PP). This is not a winter to favor Carolina Wrens: nevertheless, one was heard 4 times since January 22 (TK), another on January 17 (TSt), and 2 more throughout January (Knights fide MN) in residential neighborhoods of Iowa City (but none on the Iowa side of the Mississippi around Davenport, PP). A Northern Mockingbird wintered in Des Moines, as did a Brown Thrasher (at Mrs. Warters' feeder) (WB). American Robins braving the winter were perhaps more foolhardy than half-hardy. Nevertheless, they occurred in remarkably many places, including the uninviting N.E. corner of the state (4 on January 19, (JS), and were "abundant" at Riverton in the S.W. corner (RP), where indeed over 200 were counted on January 7 (RS). Flocks of 15 (February 11) west of Iowa City (NiH) and 25 in Ottumwa (February 12, Charles and Darlene Ayres fide NeH) may have been early migrants. An as yet undocumented Varied Thrush has been a regular visitor at the J. W. Hansen home at Long Grove since Christmas (fide PP). Eastern Bluebirds in the deep-freeze of Allamakee Co. (one each on December 29, DK and January 15, JS) were astonishing. A small group (4-5) wintered in the more hospitable climate of Lucas Co. (G-LC), but even the one in Fremont Co. on January 14 was viewed with surprise (RS). A Townsend's Solitaire N.E. of Decorah was seen on December 23 (DK) and January 15 (DK, JS, admirably documented by the latter). Golden-crowned Kinglets were down in the Davenport area (PP), but a few were

regular at Lock and Dam 9 and YRF (JS). Single Bohemian Waxwings, in the company of Cedars, were seen in HHP, January 13, and from my front door, January 28 (NiH). Up to 50 Cedar Waxwings were regular in HHP through the period and 25+ from January 4 on in Cherokee (DB); other flocks seen were in St. Lucas (15, February 11, JS), Marble Rock (50, same day, PK) and Ottumwa (38, February 12, C. Ayers fide NeH). This may have been a bit of an echo year for Northern Shrikes: a total of 9 from the N.E. (JS, DK), one on the Cedar Rapids CBC, an immature seen on February 5 south of Spencer, and well described (DB), one repeatedly seen west of Iowa City (December 24 - February 12, TK, NiH), and one at Dean Mosman's feeder add up to an above-average count. *Loggerhead Shrikes were regular in that "pocket" north of Des Moines (DM) and occasional in Fremont Co. (RP, RS); 5 were seen in Lucas Co. (G-LC). Koenig suggests that Northern Shrikes are not uncommon north of the 42nd parallel, and don't require documentation if observed there. Such a sharp dividing line is not reliable when even moderate incursions occur: for the populous central sector of the state, it is safer to report shrike sp. unless details are observed. Meadowlarks were down, even when snow drove them to the roadsides (PP). Along a Breeding Bird Survey route (W. Liberty to Kalona), 12 meadowlarks sp. were counted on February 10 (MN, RD). All meadowlarks seen in northeast Iowa were carefully examined and found to be W. (JS). The largest group of Red-winged Blackbirds entirely inside Iowa consisted of 150 individuals (CoR, January 29, MN). A Rusty Blackbird seen by A. J. Boersma in Sioux Center on January 27 (fide JV) was considered unusual there; 5 were at Harpers Ferry on February 5 (DK). There were only isolated reports of Common Grackles inside Iowa, but there was steady traffic from a large roost by Cordova, Ill. across the river (PP). The highest count of Brown-headed Cowbirds in downtown Iowa City was 35 on January 11 (RD).

Finches, Sparrows. Northern Cardinals were scarce in Sioux Center (JV). Evening Grosbeaks staged a massive invasion, reaching s.c. Texas. Only in some places in Iowa did they linger: 5-7 daily at Ruth Phipps' feeder, one for 3 weeks until January 4 (DM), and 4-12 at Davenport area feeders (PP). Good numbers, possibly birds in transit, were recorded in YRF (December 2, 24 on December 24, DK, JS). Late observations (2 on February 10 at Seymour, ChS, 1 at Central City, February 11, LS) may signal the start of a retreat to the north. Purple Finches were widely seen, but not in large numbers, and with apparent hiatuses. The highest count seems to have been about 30 in HHP in mid-January (MN). One of the glories of the season was an invasion of Pine Grosbeaks. At least 14 were seen January 7 - February 10 at St. Lucas and West Union (JS), 10 on December 22 in YRF (DK), 2 east of Larabee (MB), one at a Des Moines feeder in mid-January (fide RM), 3 in Glendale Cemetery, January 24 (RM, WB et al.; documented), and 5 in HHP and the adjacent cemeteries January 12 - February 11 (RD, TK, Tst, TSh; documented), for a new area record. The birds seen on the CBC in Cedar Rapids were probably those that kept showing up on January 27 in a yard not far from Cedar Memorial Cemetery (EO) with such regularity that they could be viewed by virtually all active birders in Cedar Rapids and 2 from Iowa City (TSh, NiH) (up to 7 birds). With a slight departure from the checklist order, let me write first about Common Redpolls. Having appeared in the northeast in November, they swept across the state, reaching Shenandoah in mid-January (IG, RP). There were a few flocks of 75-100 birds in weedy fields (west of Des Moines, WB; CoR, MN, RD), but for the most part the birds came to feeders in towns, in moderate numbers. In Davenport, 59 were banded January 18 - February 1 (PP). A relatively large urban group was 50 in HHP and nearby cemeteries on February 5 (RD). Strangely, Common Redpolls did not appear in northwest Iowa (Cherokee, Spencer) until well into February (DB, CoS). Perhaps because of the affinity of the redpolls for

feeders, the stage was set for the addition of Hoary Redpoll to the state list. See the longer note on the sighting of a female in Marion on January 22 (FT), subsequent confirmation by others, netting and photography. As of February 15, this bird has been seen by numerous observers from the Cedar Rapids area (Weir Nelson, LS), Iowa City (TK, TSh, NiH) and Davenport (PP). Its presence lends plausibility to an earlier sighting under much less favorable conditions (S-SB, see longer note) and several subsequent ones (1 from 20 yards with a 20x scope in Pocahontas Co., February 5, and 2-5 with white rumps or light appearance in a flock of some 80 Common Redpolls, February 12, Buffalo Creek Conservation Area) (RC). More convincing is a second documented sight record at a feeder, of a male (February 12, PP). Even though the Hoary Redpoll is now a solid addition to the Iowa list, only extremely detailed observations will be considered corroborated, for **I.B.L. or American Birds!** Pine Siskins were also common in the southern part of the state, all the way to Hamburg (IG) and Seymour (ChS). Petersen banded 152 January 18-February 1. But few were left in the N.E. (5 on December 18, JS). While some northern finches brought glamour to an otherwise tiresome Iowa winter, Red Crossbills were not reported at all. White-winged Crossbills were "common" in the N.E. in early December, but not thereafter (DK) (one on December 24 at YRF, JS); 4 were at Eagle Point in Clinton on December 3, and one at a nearby feeder February 6 (PP); a single female has been a regular at a Cedar Rapids feeder since December 28 (LS). A Rufous-sided Towhee at Hamburg on January 22 was, atypically, of the eastern race; later, a member of the western race appeared (IG). "Many" Harris' Sparrows were at Riverton on January 22 (RP); the 70+ banded at Elkhart are even more remarkable (DM); singletons strayed east as far as Iowa City (James Fuller feeder, January 14, fide MN) and Cedar Rapids (since January 1, LS). White-crowned Sparrows were also common in the S.W. (RP), with 75 at Riverton on January 7 (RS). White-throated Sparrows away from feeders were reported from the Amana Woods (January 7, TK) and west of Iowa City (January 29, RD). Two at Riverton (January 7, RS) were considered quite unusual. Fox Sparrows (singles) were found in the Amana Woods (December 31, TK) and at a feeder in Hamburg (January 24, IG). Swamp Sparrows that evidently survived the winter were seen on January 14 (6 at Forney's L., RS) and February 12 (one at Bettendorf, PP). Lapland Longspurs were irregularly common along roadsides, as far south as Burlington (C-JF); 200 were counted on a trip from Davenport to Decorah, February 3 (PP). Almost unanimously, our correspondents reported abundant Snow Buntings, with penetration to the south edge of the state, but many left for the northeast (410 by actual count at Protivin on January 21, JS). The Davenport to Decorah count yielded 800-1000 individuals (PP).

Erratum. Dean Mosman's initials were used in the Fall Report, but his name was inadvertently omitted from the credits.

Contributors. Dick Bierman, Cherokee; Marion Brewer, Cherokee; Woodward Brown, Des Moines; Sue and Stuart Burns, Des Moines; Marie Carlson, Boone; Gay and Lloyd Crim, Lucas; George Crossley, Dubuque; Raymond Cummins, Pocahontas; Rich De Coster, Iowa City; G. Edgar Folk, Jr., Iowa City; Charles and Jane Fuller, Burlington; Ione Getscher, Hamburg; Nicholas Halmi (NiH), Iowa City; Nelson Hoskins (NeH), Ottumwa; Thomas Kent, Iowa City; Pearl Knoop, Marble Rock; Darwin Koenig, Decorah; Richard Mooney, Des Moines; Dean Mosman, Elkhart; Mike Newlon, Iowa City; Emma Lou Oldenburger, Cedar Rapids; Peter Petersen, Davenport; Ruth Phipps, Shenandoah; Joe Schaufenbuel, St. Lucas; Conrad Schlemmer (CoS), Spencer; Charlotte Scott, Seymour; Lillian Serbousek, Cedar Rapids; Thomas Shires (TSh), Iowa City; W. Ross Silcock, Malvern; Tom Staudt (TSI), Iowa City; Fred Thompson, Marion;

John Van Dyk, Sioux Center; Hank and Linda Zaletel, Ames. N. S. HALMI, Rte. 6, IOWA CITY, IA. 52240.

Reminder. Please send your reports for the Spring Season as soon as possible after its end (May 31) and certainly no later than June 5.

Field Report Dates		Report due before	(for
Season	Period	(For IBL)	Am. Birds)
Spring	March 1-May 31	June 7	Same
Summer	June 1-July 30	August 7	Same
Fall	August 1-November 30	December 7	Same
Winter			
IBL	December 1-February 10	February 15	
AM. Birds	December 1-February 28		March 7

Note that the periods and due dates for **IBL** and **Am. Birds** differ only for the winter period, when **IBL** had to go to press early because of the spring meeting schedule. Please report all findings for **IBL** by February 15, and those of region-wide interest made between February 10 and 28 in an addendum that can be sent on to **Am. Birds**. - Nick Halmi

General Notes

Possible Immature Trumpeterswan Swan in Fremont County - On December 18, 1977 Ross Silcock and Clifford Miles watched an immature swan at the Riverton Game Management Area, Fremont County, Iowa. It was an overcast day, with good to fair light, and the bird was studied from about 2:30 until 3:15 p.m. with a Bauscope Sr telescope at about 300 yards.

The bird was swimming in an open area of about 20 acres within the largely frozen impoundment at the Riverton GMA where several thousand each of Snow Geese and Mallards were headquartered, although at the time of the observation the geese and most of the Mallards were absent, probably feeding. Identification as a swan was made on the basis of large size relative to the few geese present and the long neck, along with the graceful movements of the latter. The manner of carrying the head and neck upright rather than curved suggested that the bird was not a Mute Swan. The identification problem this appeared to be one of distinguishing between Whistling and Trumpeter Swans.

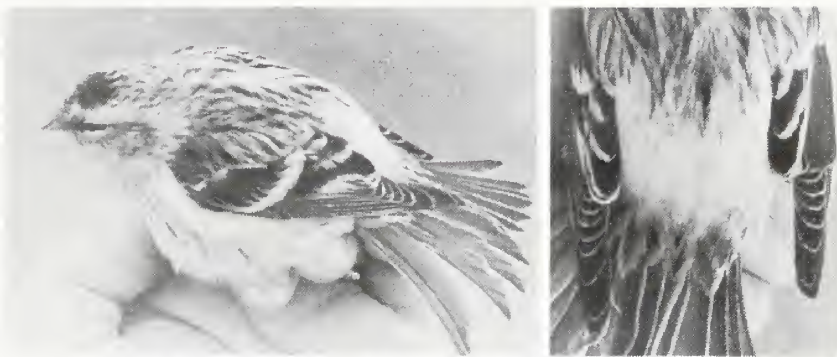
My feeling is that at this time of year and at this location either species is likely, the Whistling having been recorded a few times in the past (although not as late as December 18), and the Trumpeter because of the location of three breeding colonies within about 350 miles of Fremont County, Iowa. These are at LaCreek NWR in south-central South Dakota, Valentine NWR in north-central Nebraska, and Carver Lake in southeast Minnesota. The population at LaCreek is rapidly expanding to nearby lakes (see *Nebraska Bird Review* 41:15 and *American Birds* 30:969), and immatures from at least the Carver Park colony have been known to depart in fall for unknown destinations (see *Minnesota Birds: Where, When, and How Many*; 1975). However Eckert (pers. comm.) noted that birds at Carver Park are presently either wing-clipped or sedentary.

According to Bellrose (*Ducks, Geese, and Swans of North America*; 1976), the most reliable method for separating Whistling and Trumpeter Swans in the field is leg color: pinkish or flesh-colored in the immature Whistling and mustard-yellow in the immature Trumpeter. Unfortunately this could not be determined as the bird was swimming and not enough of its legs could be seen. Bill color is not determinative in immature swans, as all three species change bill color as they mature: Whistling and Trumpeter from pink or orange to black, and Mute from dark gray to orange. The timetable of these changes is variable. The Riverton bird

had a dull orange bill with about the distal third black. Near the head the bill was also dark, but the extent of this dark area was difficult to determine under the conditions, as it was about the same color as the dark feathering of the crown and sides of the head. Bellrose also states that the Whistling Swan begins to lose its immature plumage in late fall and early winter, whereas the Trumpeter retains its until spring or early summer. Thus an immature Whistling Swan in December should appear basically whitish with dark shadowing. This is the impression I have of immature Whistling Swans I have seen on several occasions at CBC time at Pea Island NWR in North Carolina. In contrast, the Riverton bird was very dark, with the crown especially and the back of the neck almost chocolate-colored. In this context an interesting note was published by Gail M. Shickley in *Nebraska Bird Review* (36:46), in which an immature swan seen in flight November 21 at Cody Park in Lincoln County, Nebraska was identified as a Whistling on the basis of its plumage coloration, described as follows: "The dingy white of its plumage, washed with a slightly darker beige color on its back and upper wing surfaces, . . ." (emphasis mine). This observation coincides with my conception of early winter Whistling Swans being basically whitish, and adds weight to the possibility that the Riverton bird was a Trumpeter Swan, as the latter was very dark at a time one month later than when the Cody Park Whistling Swan appeared "dingy white".

Unfortunately, because immature plumages can be rather variable, species identification in this case cannot be made with certainty. Notwithstanding, the probability of this bird being a Trumpeter Swan cannot be eliminated based on the foregoing. -- W. ROSS SILCOCK, R.R. 2, Malvern.

Hoary Redpoll (*Carduelis hornemanni*) in Iowa. -- Since Hoary Redpolls have been seen in several states as far as or farther south than Iowa, and since redpolls this winter were apparently widespread in the state, it was perhaps to be hoped that Hoary Redpoll will be added to the state list in 1978. On January 8, Mr. and Mrs. Stuart Burns saw 2 light birds with apparently white rumps in a flock of Com. Redpolls at Maffit Reservoir, Des Moines. They took them to be Hoarys, but lost faith in the diagnosis when they subsequently realized that this species had never been reported from Iowa before. Since the birds had not been seen from closer than 70 ft., the skepticism expressed in Mr. Burns' documentation form appeared justified. On February 3, through the good offices of Mr. Weir Nelson, I was put in touch with Mr. Fred Thompson of 2830 McGowan Blvd., Marion, who gave an excellent description of an apparent female Hoary Redpoll he had been seeing every morning for over 2 weeks at his feeders. He was eager to have the identification confirmed by other observers. Fortunately, on January 28 Drs. Thomas Kent and Thomas Shires and I had been to Duluth, and had an excellent opportunity to study both redpolls from 5 feet at the feeder of Kim Eckert, one of Minnesota's leading birders. On February 4, before daybreak, the 3 of us therefore drove to Marion, and soon picked out a "frosty" looking female among the 20-25 Com. Redpolls flitting around in Mr. Thompson's yard. When he joined us, he pointed out that the light-colored female had a buffy tinge around her face, which facilitated her identification. The birds were quite restless, but finally the "suspect" alighted on a thistle feeder, along with several Com. Redpolls; and subsequently sat relatively still on a branch of a tree, some 10 feet off the ground and not more than 18 feet from the observers. In addition to the overall lighter coloration and the buffy facial tinge, it had several features clearly seen by all 4 of us that set it apart from Common Redpolls: a) its black chin spot was smaller than that of most other birds. b) It had only 2-3 thin, interrupted longitudinal black streaks on each side of the breast. c) The streaks of the back were very narrow. d) When the bird flipped its wings, it was clear, as Mr. Thompson had observed on many occasions, that these



Hoary Redpoll, Marion, Iowa Photos by Peter C. Petersen

streaks came to an abrupt halt at the upper end of the pure white rump. e) The crissum, which could be studied at leisure because the bird perched above eye level, was entirely white. In contrast, all Common Redpolls studied had a distinctly streaked rump and a crissum flecked with black. The observations were made between 8:00 and 8:20 a.m. The sky was overcast, light snow was falling, and the bird was west or northwest from the observers, so illumination was excellent. Although Tom Kent had a camera along, he did not feel that critical field marks could be well shown in a photograph because of the viewing angle and skittishness of the birds, which made it inadvisable to attempt a closer approach. Separate verbal documentations were prepared by the individual observers, and these have been submitted to the IOU Checklist Committee and the Regional Editor of *Am. Birds* in support of this first state record for Hoary Redpoll that was obtained under the "ideal conditions" Robbins considers necessary for reliable separation of Hoary from Common Redpoll in the field. N. S. HALMI, R No. 6, IOWA CITY.

Editor's note -- On February 11 Mary Lou and I netted and photographed this bird. The diagnostic photos are reproduced here. The bird was seen by Lillian Serbousek, Weir Nelson, Dr. Peter Wickham and Mr. and Mrs. Thompson. A male Hoary appeared at our feeder in Davenport on February 12. The following description was taken from the documentation sheet filed by Fred Thompson: Size $4\frac{1}{2}$ - $5\frac{1}{2}$ Finch shape - feet dark - crown, pale red cap - chin black - beak yellowish - Auriculars light buffy - nape, throat light buffy - breast, belly and under tail coverts ash white, no streaks - side, flank broken grey streak - mantle, back dark grey and silvery white streaks no buff - rump ash white no streaks or spots - wing bars silvery white no buff - secondaries, primaries, wing coverts and tail feather edges silvery white no buff. Beak short and stubby compared with other redpolls seen. Bird much lighter than other redpolls seen. Complete lack of buff below nape. As described by Arthur Bent, "frosty appearance". The I.O.U. Checklist Committee has accepted this species to the Iowa List.

Snowy Owl Observed in Hardin County, 1974. - On the afternoon of December 27, 1974, Don Henderson of Zearing and I saw a Snowy Owl in Section 32, Township 86 N., Range 21 W. in Hardin County, Iowa. The single bird was first seen standing in a plowed field. Shortly thereafter, it flew to a nearby fencepost. We both viewed the bird in bright sunlight through a Lyman 6X telescopic sight at a range of 300 yards. This is the only Snowy Owl I have ever seen in Iowa, although I have seen them on numerous occasions in western Minnesota where I previously worked as assistant manager of the Lac qui Parle Wildlife Refuge. CARROL L. HENDERSON, Nongame Supervisor, Section of Wildlife, Dept. of Natural Resources, Centennial Bldg., St. Paul, Minn.

Dune Country -- Glenda Daniel -- The Swallow Press, Chicago -- 167 p., many line drawings -- 1977 -- \$4.95.

Are you a long time fan of the Indiana Dunes? Or have you never had the privilege of walking those lovely beaches and trails? Either way this book is for you! Glenda Daniel and her illustrator, Carol Lerner, have produced an excellent guide to the Dunes area, including both the Indiana Dunes State Park and the Dunes National Lakeshore. Divided by ecological areas (beach, fore-dune, wandering dune, wetlands, etc.) the text has been carefully researched and interestingly written. It is not only a goldmine of natural history information but also very entertaining, easy to read both silently and aloud. The trail maps are very helpful. Ms. Daniel is a professional writer and her skill at exposition really comes through in page after page of plant descriptions. Carol Lerner's stunning and sensitive black and white drawings reveal the grace, delicacy and identifying details of both plants and animals. One might wish for better relationship of text to illustration sometimes, and also for an index of topics and drawings, but overall this book is a distinct aid to one's pleasure in and increasing knowledge of the Dunes. Another item for a second edition would be blooming dates of the more common plants. How early do arbutus flower? Are fringed gentians summer or autumn bloomers? I've roamed the Dunes for years and know small corners of it very well -- but have learned many new things. Did you know that where blueberries grow the Dunes have been stabilized for 8000 to 10,000 years or that one vireo repeated its song 22,197 times in a single day? --Emma B. Pitcher

Birds of Field and Forest -- Peter Wood-Time-Life Television, New York -- 128 p., many color photographs -- 1977 -- \$7.95.

Another in the "Wild, Wild World of Animals" series (I.B.L. Vol. 47 p. 71), this volume, again with excellent color photographs well reproduced, covers peacocks, pheasants, eagles, falcons, owls, hummingbirds, parrots, pigeons, woodpeckers and cranes throughout the world. Sections drawn from the writings of others include Franklin and Audubon's views of the Wild Turkey vs. the Bald Eagle as the National Bird and the Passenger Pigeon by Audubon. Written for the general reader this well illustrated book is certainly worth its price. ed.

The Complete Outdoorsman's Guide to Birds of Eastern North America -- John P. S. Mackenzie -- Houghton Mifflin Co., Boston -- 240 p., many line drawings -- 1977 -- paperbound -- \$4.95.

The only advantage to this book over one of the "standard" field guides seems to be the somewhat more detailed text. From the title it would seem to cover the same area as the Eastern Field guide by Roger Peterson, but the introduction indicates the coverage is "Northeastern U.S. and Eastern Canada". Some common names correspond to the 1973 A.O.U. changes, some do not. Be sure to examine the book before purchasing, it is not likely to be useful to most birders. ed.

The Hen Harrier -- Donald Watson -- T. & A. D. Poyser, Birkhamsted, Hertfordshire, U. K. -- 307 p., 4 color plates, many line drawings, charts, tables and maps -- 1977 -- \$20.00.

This British monograph deals with our Northern Harrier or Marsh Hawk. The author-artist has been researching this species since the 1940's. He begins the text with a description of the world distribution of the various harriers with emphasis on this species in Europe and North America including the life history and present status. The second part of the book consists of Watson's observations in Scotland. Much detailed information is presented in tables at the end of the book and the bibliography is quite extensive. As one comes to expect from British monographs it is an excellent and most complete book. ed.

Birds of Utah -- C. Lynn Hayward, Clarence Cottam, Augus M. Woodbury and Herbert H. Frost -- Brigham Young University Press, Provo -- 229 p., 21 color photographs, 44 black-and-white photographs, one map -- 1976 -- paperbound \$10.00.

Utah joins the long list of states boasting an updated bird checklist with annotation. The order followed is essentially that of the A. O. U. except for Passerines which follows Peters' Checklists. For each species the status is given and specific records are cited. The introductory material summarizes historical data, bird habitats, populations, physiography, climate, and discusses conservation organizations, state and federal waterfowl areas. The fine photographs, the work of Richard Porter and Robert J. Ervin, enhance the text and present fresh material. The work is a creditable update of the avifauna of Utah. ed.

Note

Mrs. Barbara J. May, 1101 Skylane Dr. Norwalk, Iowa, 50211, daughter of Mr. and Mrs. Myrle Jones, is in the process of selling some of their nature publications and books. Anyone interested can obtain a list from Mrs. May at the above address.

Cover

The 1978 I. B. L. cover, a pair of Green-winged Teal, is the work of David Anderson of Moline, Illinois. Born in Bogata, Columbia, Mr. Anderson spent most of his childhood in South America before moving to Omaha. He is a graduate of the University of Nebraska and the American Academy of Art in Chicago. Before joining the Advertising Dept. of Deere and Co. about five years ago he was a combat artist for the U.S. Marine Corps. in Viet Nam. ed.

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

(Act of August 12, 1970: Section 3685, Title 39, United States Code)

Title of Publication: **IOWA BIRD LIFE**

Date of Filing: October 1, 1977

Frequency of Issue: Quarterly

No. of Issues Published Annually: four (4)

Annual Subscription Price: \$5.00

Location of Known Office of Publication and Headquarters: 235 McClellan Blvd., Davenport, Scott Co., Iowa 52803

Name and Address of Publisher, Editor, and Managing Editor: Peter C. Petersen, 235 McClellan Blvd., Davenport, Iowa 52803

Owner: Iowa Ornithologists' Union, 5612 Urbandale, Des Moines, Iowa 50310

Known Bondholders, Mortgagees, and other Security Holders owning or holding 1 percent or more of total amount of Bonds, Mortgages or other Securities: None

Average No. Copies Each Issue During Preceding 12 Months	Nearest Single Issue
A. Total No. Copies Printed (Net Press Run)	750 810
B. Paid Circulation - Mail Subscriptions	660 710
C. Total Paid Circulation	660 710
E. Total Distribution (Sum of C and D)	660 710
F. Office Use, Left-Over, Unaccounted, Spoiled after Printing	90 100
G. Total (Sum of E & F - should equal net press run shown in A)	750 810

Peter C. Petersen, Editor

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